

**THERAPEUTIC
EFFECTS
of
ULTRAVIOLET**

For users of the
**ALPINE SUN and
KROMAYER Lamps**

HANOVIA CHEMICAL & MFG. CO.
NEWARK, N. J.
U. S. A.

FOREWORD



HIS is not so much a book as a reference guide. It is offered in the spirit of service to the physicians to whom Quartz Light Therapy is a new subject. It is the expression of the findings and a consensus of the opinion of many eminent physicians who have employed HANOVIA Quartz lamps in hospitals and in private practice. It may serve as a guide in a general way for the building up of the individual practitioner's technique.

We wish to express our thanks to those physicians, scientists, technicians, chemists and physicists who, through their generous cooperation, have so materially aided us in compiling the data given in the following pages.

It is our sincere trust that, with the information herein given and elsewhere procurable, the users of HANOVIA Lamps will develop the maximum skill in their employment of ultraviolet light. With the successful employment of this potent modality the science of therapy will have advanced farther toward its ultimate goal—the alleviation of the ills of humanity.

HANOVIA CHEMICAL & MFG. CO.

NEWARK, NEW JERSEY

1937

TABLE OF CONTENTS

QUARTZ LIGHT SPECTRUM.....	Frontispiece
FOREWORD	
PURPOSE AND SCOPE.....	1
STANDARDIZING THE LAMPS.....	2
ULTRAVIOLET SKIN REACTIONS.....	2
ERYTHEMA CHART	7
THE INTERVAL TIMER.....	8
THERAPEUTIC APPLICATION	8
GENERAL BODY RADIATIONS.....	9
TECHNIQUE OF COMPRESSION TREATMENT.....	10
DISTANCE RADIATION WITH THE KROMAYER LAMP....	11
LOCAL RADIATIONS WITH ALPINE SUN LAMP.....	11
THE USE OF APPLICATORS.....	11
PENETRATIVE PROPERTIES OF ULTRAVIOLET.....	14
PUBLISHED BOOKS OF ULTRAVIOLET THERAPY.....	15
WARNING	16
INDICATIONS AND SUGGESTED TECHNIQUE.....	16-50

Technique Handbook

ON

Quartz Light Therapy

For users of the

ALPINE SUN and KROMAYER LAMPS

HANOVIA CHEMICAL & MFG. COMPANY

NEWARK, N. J.

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HANOVIA

HANDBOOK ON QUARTZ LIGHT THERAPY

PURPOSE AND SCOPE

The purpose of this book is to lay before the new user of the Alpine Sun Lamp and Kromayer Lamps sufficient preliminary information so that, with the Handbook as immediate reference, his individual technique may be built up from the experience of other clinicians.

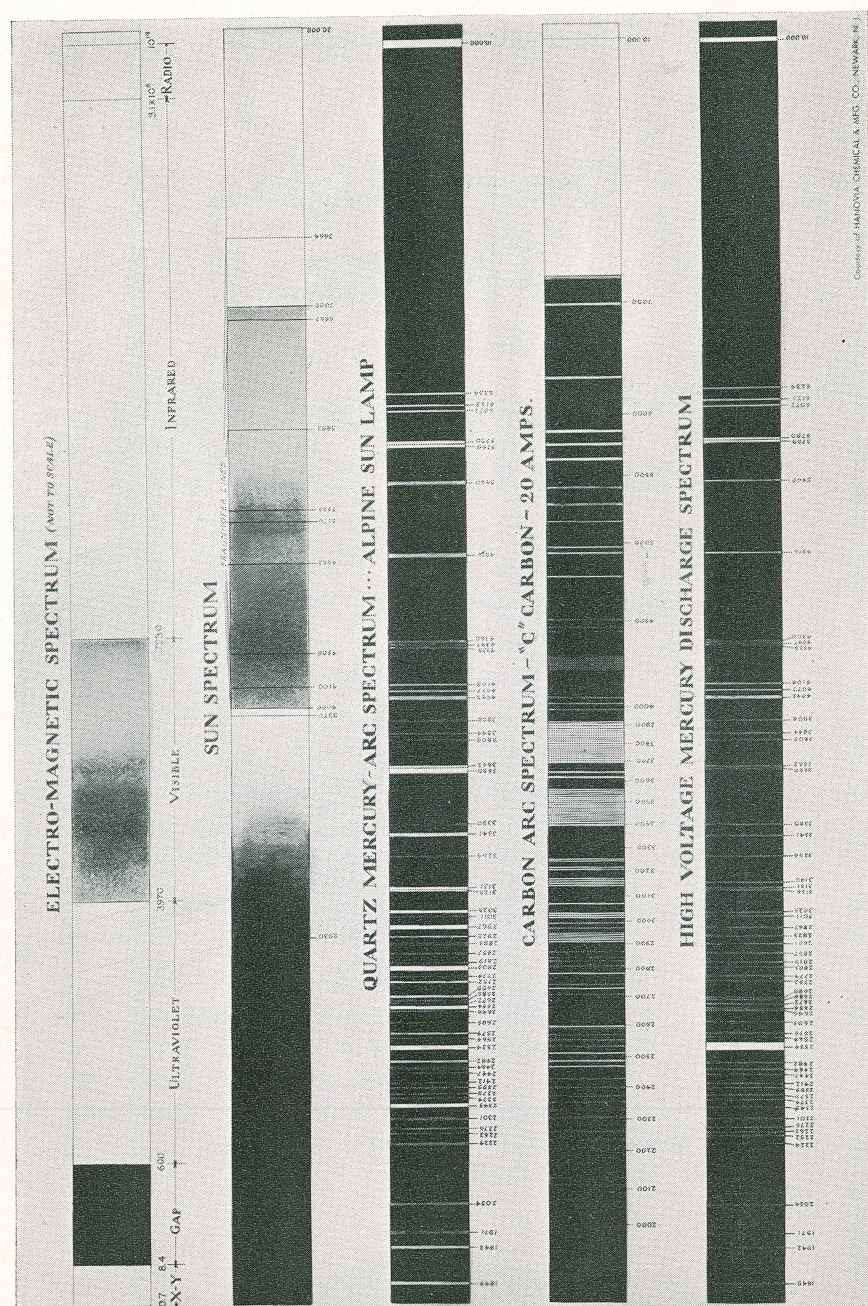
In this Handbook we are primarily concerned with the question of technique. Such topics as mechanical features, setting up and installing lamps and the operation of the mechanical parts are considered in another book, known as the "Instruction Book," which is supplied with each lamp. We urge every new user of HANOVIA Lamps to read carefully the "Instruction Book" supplied with each lamp. A thorough understanding of the mechanics of the lamp is the first step towards its successful employment.

There are no arbitrary rules by which one must abide to succeed in the use of Quartz Light. Each patient's sensitiveness to the action of the rays governs the dosage employed. A careful study of each individual case, and a thorough knowledge of this potent agent are essential if the most gratifying results are to be recorded.

We have endeavored, in cor-

relating the data furnished by the various writers, logically to merge their recommendations in order to present an accurate assemblage of the most prevalent and resultful practice. Thus they provide a safe working basis for the new user, until his own experience teaches him what procedure is best for the case in hand. Recourse has been made to all the available literature on the subject, and in the technique section of this Handbook, wherever possible, the medical references have been listed. It is hardly necessary to stress the advisability of securing these papers which bear directly upon the successful use of ultraviolet in connection with the indication under which they are listed.

It should be understood that we do not stand sponsors for all the several claims made by the various writers. Our purpose has been to indicate the degree of authority for the claims made under each indication. If, in some instances we have erred by including those where the advantage of treatment by ultraviolet light is open to question, we shall feel greatly indebted to our friends for their cooperation to the end that unfounded or over-enthusiastic reports will be omitted from future editions.



STANDARDIZING THE LAMPS

ALPINE SUN LAMP—Take a sheet of paper and cut a small hole in it about 1 inch in diameter. Place the paper over the arm, and expose the arm to the rays of the Lamp at ten inches distance. Hold arm exposed for one minute, move paper to another part of the arm and expose for two minutes, then three minutes, four, etc. On the following day notice the results, and try at thirty inches distance, repeating the same operations. In this way can be determined the length of

time it takes your individual lamp to produce a first, second, third and fourth degree erythema, at any particular distance.

KROMAYER LAMP—Using the same method, hold the arm against the Quartz lamp window, about 10 seconds, then another spot for 20 seconds, and so on, up to one minute. The next day repeat, holding the arm 2½ inches away, etc. When you have determined these factors you have standardized your individual lamp.

ULTRAVIOLET SKIN REACTIONS

It is extremely important that the sensitiveness to ultraviolet light of each individual patient be given careful consideration, for it is understood that a fair-skinned or blonde person reacts much more readily than a darker subject. With this in mind, one can proceed to prescribe Quartz Light more effectively and without fear of discomfort to the patient.

The following are the definitions of the degrees of erythema specified in the Technique Section of this Handbook:

A FIRST DEGREE ERYTHEMA is a reaction so slight that it causes no subjective symptoms. The reddening of the skin is very slight, and is not followed by visible exfoliation.

A SECOND DEGREE ERYTHEMA is a reaction accompanied by symptoms of mild sunburn. The reddening is plainly visible, and after the reaction subsides it is followed by a granular exfoliation.

A THIRD DEGREE ERYTHEMA is a reaction intense enough to cause symptoms of severe sunburn. The reddening is intense and the epidermis can be peeled off in large strips.

A FOURTH DEGREE ERYTHEMA is a blister production.

Frequency of Treatment: It is of utmost importance to know how frequently ultraviolet may be administered. To this end, the ERYTHEMA CHART should be carefully studied. The Chart ex-

plains the various reactions for each degree of erythema, and the time required for the clearing up of the skin.

In those cases where treatment has been omitted for a period of ten days, it is safest to recommence the treatment with half

the last exposure. If, however, three weeks or more have elapsed, it is well to begin again with the initial dosage.

The energy distribution from a quartz mercury arc (Alpine Sun Lamp) is shown in Fig. 1.

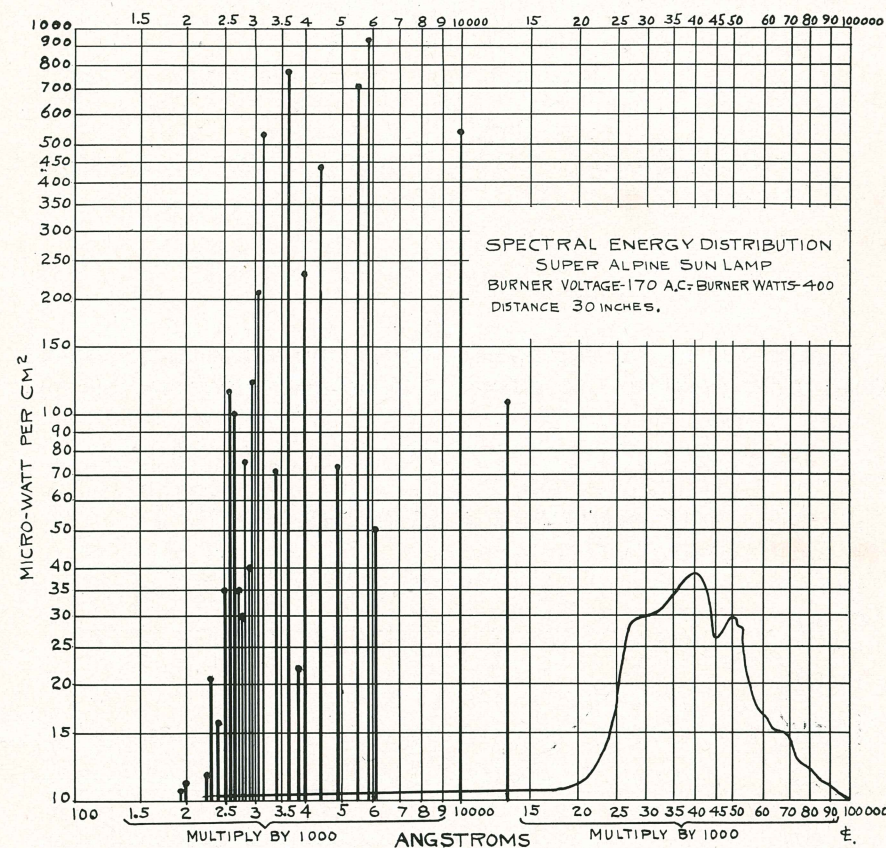


FIG. 1

The relative effectiveness of various ultraviolet wave lengths in erythema production has been

determined by Coblenz, Stair & Hogue and is shown in Fig. 2.

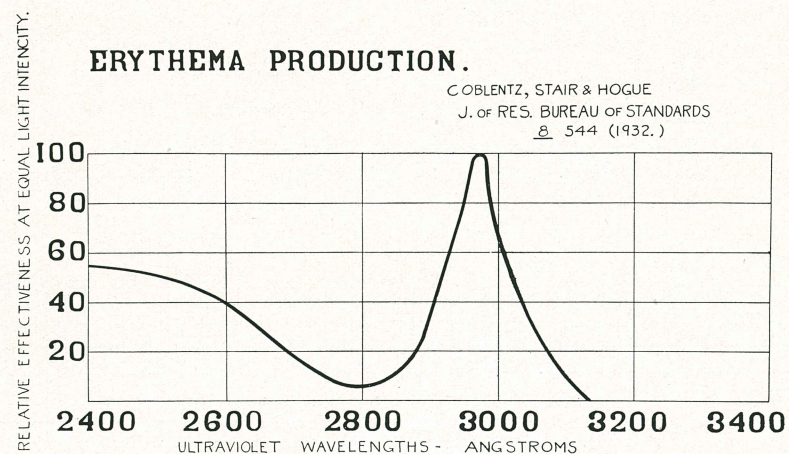


FIG. 2

Figures 3 to 7 show in graphic form other properties of ultra-

violet of importance in the clinical evaluation of ultraviolet therapy.

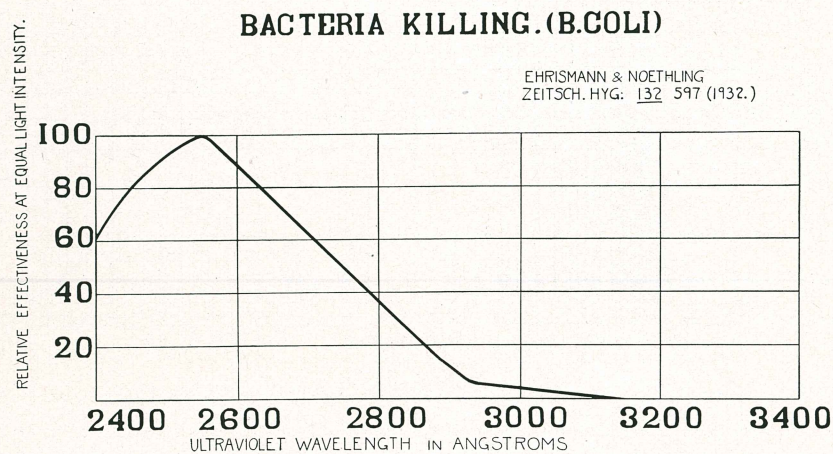


FIG. 3

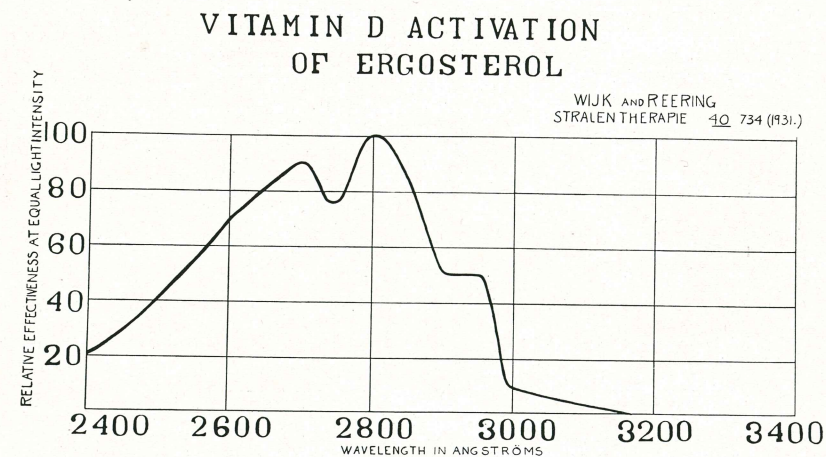


FIG. 4

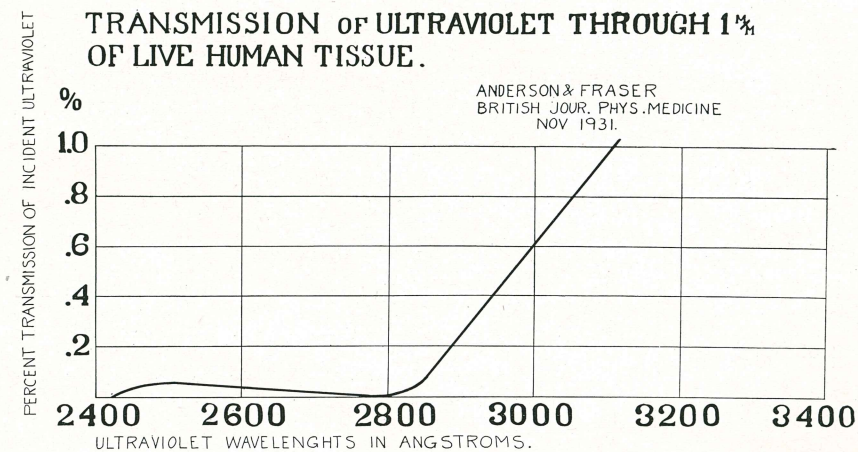


FIG. 5

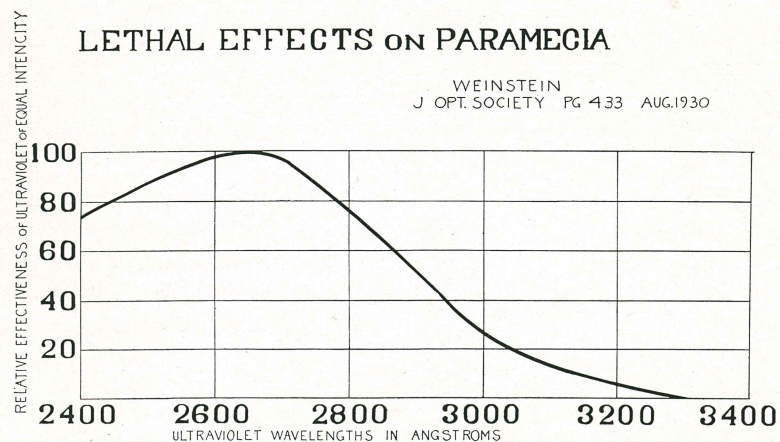


FIG. 6

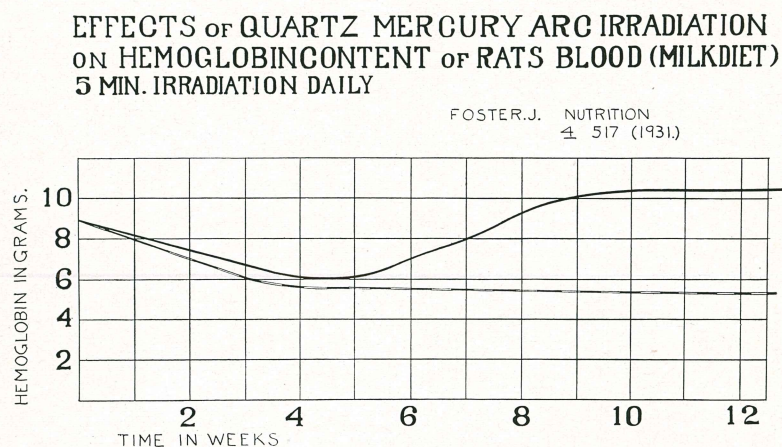


FIG. 7

Pigmentation: After repeated doses, erythema ("Sunburn") is followed by pigmentation ("tanning"), which is due to the deposition of the pigment melanin as granules around the nuclei of the basal cells of the epidermis. They thus form a protective screen around the nuclei. In therapeutics, therefore, the appearance of pigmentation necessitates the administration of longer exposures.

The following table gives the various figures necessary in cal-

culating length of dosage time, distance of radiation, etc. These figures have been compiled by taking the average of some new Alpine Sun and Kromayer Lamps. This chart can act as a guide to you, but you must bear in mind the fact that it is essential for you to standardize your own particular lamp in order to get the best therapeutic results. You might find some difference in time, but whether it is large or small, you should be familiar with the following chart:

ERYTHEMA CHART

Time and Distance Factors for Initial Dose
(Stated for 115 (or 230) volt Alternating Current 1937 Models)

	Super Alpine Sun Lamp		Super Self-Contained Kromayer Lamp			Luxor B Model Alpine Sun Lamp	Kromayer Oral Therapy Lamp
Distance	20 ins.	30 ins.	Contact	2½ ins.	8 ins.	30 ins.	2½ ins.
First Degree	20 sec.	30 sec.	3 sec.	10 sec.	50 sec.	1 min.	30 sec.
Second Degree	40 sec.	1 min.	6 sec.	20 sec.	2 min.	2 min.	1 min.
Third Degree	1½ min.	2½ min.	12 sec.	40 sec.	4½ min.	5 min.	2¼ min.
Fourth Degree	4 min.	7 min.	30 sec.	2½ min.	10 min.	15 min.	7 min.

For 120 volt D. C. Super Alpine Sun Lamps and Luxor B Model Alpine Sun Lamps, add 100% to the above exposure times.

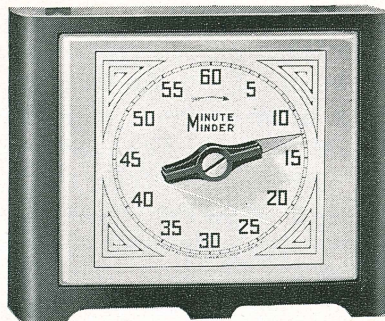
The exposure times for 120 volt D. C. Super Self-contained Kromayer Lamps and Kromayer Oral Therapy Lamps are the same as for the A. C. models.

Give one-half to one-third of the exposure times when treating infants and small children.

When employing applicators with Kromayer Lamps the exposure times through the applicators will need to be increased about three-fold. A test through the applicator on the skin of the forearm will establish the relationship (i.e., the proper multiplier).

THE INTERVAL TIMER

The HANOVIA INTERVAL TIMER is very helpful in aiding the physician to give the exact dosage time. It is a simple apparatus, and when set to the required time, gives the alarm when the treatment is finished. In this way the operator is relieved from the necessity of holding a watch or personally supervising the treatment. When dosage time runs up to ten minutes or more, this Timer renders very important service, relieving the operator during the entire length of treatment.



THERAPEUTIC APPLICATION

To secure the best therapeutic results with the Quartz Lamps several points should be taken into consideration, and while not demanding immediate recognition with a new lamp, they should be given serious thought and subsequent attention.

It is important to see that the arc tube has not become clouded. A clouded tube will greatly reduce the intensity of the ultraviolet rays, and therefore the effectiveness of the radiation.

To avoid interruption of service the clouded burner should be exchanged for a new one. The cost involved is very little higher than the cost of renewing the old burner.

The sensitiveness of each patient's skin to ultraviolet light

should be borne in mind. As brought out in a previous paragraph, fair-skinned persons are more sensitive than brunettes, and in those cases the various degrees of erythema are obtained in less dosage time. For the direct current Kromayer a safe rule is to move the rheostat lever (for patients with normal skin) to the third stud, moving it up to full only for patients exhibiting a subnormal reaction, and only moving it to the second stud for patients displaying more than the usual sensitiveness to the rays.

Before applying the rays, the skin should be thoroughly cleansed, and it should be remembered that scales and crusts intercept ultraviolet rays. Healthy skin reacts more strongly

ly to light than diseased tissue under treatment, and its protection during treatments should not be neglected.

It should be remembered to cover the genital organs during the radiation while giving general body dosage, as well as the breasts of female patients, as these sensitive portions of the

body are very susceptible to the rays, and severe erythema may cause pain. Mucous membranes will tolerate longer exposure than the skin.

No case has been reported, to our knowledge, in which even the most severe dosage has produced any destruction of tissue below the epidermis.

GENERAL BODY RADIATIONS

In cases of general skin eruptions and in those cases such as pulmonary and surgical tuberculosis, anemia, senile pruritus and some constitutional and nervous diseases where it is best suited to utilize the systematic effect of the rays, general body radiations are indicated. They are administered in the following manner:

Place the patient upon a flat couch, the body being entirely naked. It is well to advise the patient to relax completely and to keep the mind entirely at ease during the treatment. (Patients doing this oftentimes sink into a profound sleep.)

The skin of the entire body must be directly exposed to the rays, the thinnest covering will absorb them. When treating women the nipples may be suitably protected by small paper bottle caps of the druggist style.

A first degree erythema should be given at about 30 inches distance. Both the anterior and pos-

terior portions of the body should be radiated. The posterior first, then the anterior. At the second and subsequent treatments the time of exposure may be increased and the distance of the lamp very slowly decreased (never less than 18 inches for systemic) as the tolerance of the skin allows.

Treatments may be administered every second day for the first three exposures, thereafter twice weekly. In all cases bear in mind the patient's tolerance, and regulate the increased dosage accordingly. When the dosage administered has been full, a sensitive patient may suffer a slight headache. This may be attributed in part to the inhalation of ozone generated by the lamp (Alpine only), and whether or not this may be beneficial in certain cases, these symptoms soon disappear upon reaching the outdoor air.

In only a very sensitive patient will the reddening (erythema)

show during treatment; it generally appears three to four hours afterwards. A first degree erythema is not generally produced in *general body radiations*. The object in view when administering general radiations for systemic effects is to produce a gradual deep tanning of the entire body without vesication or undue peeling. It is sometimes recommended after 12 to 15 exposures that an intermission be made of three to four weeks before resuming treatments. When beginning treatments a gain

short exposures must be given at first, since the patient has by that time lost most of the tan, and with it the immunity to burning.

The eyes should be carefully protected; goggles may be worn by the patient or small wads of cotton placed over the eyes. The most simple method in cases of adults is to keep the eyes shut when facing towards the light.

A *tonic dose* (see p. four) is similar to a general body radiation.

TECHNIQUE OF COMPRESSION TREATMENT

The object of the compression treatment is, by producing a local dehematization through the pressure of the quartz lens on the tissues, to enable the ultra-violet rays to penetrate into the deeper layers of the epithelial tissues, instead of being absorbed by the blood in the surface capillaries.

In cases where, for physical reasons, it is not possible to exert a sufficient pressure on the tissues, either a subcutaneous injection or a surface application of adrenalin may be resorted to, and the lens merely placed against the surface without exerting any pressure on it.

When treating skin lesions the lens selected should always be, as nearly as possible, the same size as the lesions to be treated and a

simple method to avoid burning the healthy skin surrounding the lesion under treatment is to protect it with adhesive plaster or paste, as explained under the heading "Distance Radiation with the Kromayer." If the lesion is on the face, the patient can hold the lamp himself by resting his elbow on a small table, or it can be held in position by the operator.

In some cases where a long exposure is necessary, it will be found convenient to bind the lamp on, in position, by means of bandaging. The lens should be pressed very firmly against the tissues to exclude all the blood. For treatment of mucous membranes special applicators are required, suited to the particular needs of the case. (See under Applicators.)

DISTANCE RADIATION WITH THE KROMAYER LAMP

For the distance radiation of small lesions, the distance usually employed is about 2½ inches from the lamp window. For convenience in such cases, the Sharpe localizer is best employed, for in addition to insuring the correct distance, the tubes cut off the light from the surrounding healthy skin, and from the patient's eyes.

In treating larger areas, the surrounding parts should be carefully screened off. A black cloth serves this purpose satisfactorily, or a sheet of black paper with a hole cut in it corresponding to the lesion to be treated. Where it is necessary,

however, to exactly circumscribe a defined area, the most convenient method is to place pieces of adhesive plaster around the edges to give a sharply defined margin, any exposed parts outside the plaster being protected by some dark covering. As an alternative, Dr. F. G. Harris, Chicago, suggests the following paste: Tincture of green soap 50, water 50, burnt umber 15; rub well in mortar, apply with small brush to healthy tissue to be protected. After treatment paste may be readily washed off with water. The patient should be so placed that the rays strike perpendicularly the surface under radiation.

LOCAL RADIATIONS WITH ALPINE SUN LAMP

Lesions which are quite small may be radiated by covering the surrounding tissues. Local radiations are administered with the lamp hood open. Whether the rays are allowed to issue vertically or horizontally, the lamp should be so placed that the arc tube of the burner is parallel with the surface under treat-

ment.

The patient is placed in the best possible position in relation to the lamp. Cover the surrounding areas, and when treating women, additional protection should be given if they are wearing thin meshed waists. In treating the face, care should be taken to protect the eyes.

THE USE OF APPLICATORS

The successful use of the Kromayer Lamp depends to a great extent upon the judicious employment of the various applicators designed for the treatment

of the various conditions discussed under "Indications and Technique." Applicators have been designed from time to time to meet every exigency, and an

intelligent understanding of their functions is an assurance of satisfactory results with the Kromayer Lamp.

The following illustration shows the standard applicators in present use. They are made of crystal quartz, fused quartz and metal, properly fitting the Lamp. In some of the applicators bubbles are placed in the quartz rods in order to diffuse the rays. All nasal rods should have a liberal supply of bubbles. This also applies to the long and short quartz rods.

The attachments are provided with a holder, having three hooks, which slide into position from above the lamp window, and clamp on securely by thumb screws. The mica protection window should be removed before attaching the applicators.

It may be mentioned here that fused quartz applicators may be sterilized by boiling. The crystal quartz lenses are not, however, to be treated in this manner, as they will crack if placed in boiling water. Numbers 2418, 2419, 2420, 2421, 2404 and 2401 are crystal applicators.

In brief, the uses of the various applicators are as follows:

2419: *small round lens*
2420: *large square lens*
2421: *medium round lens*

Used in all compression where it is desired to force the blood out of the tissues and obtain deep penetration as in deep infections.

2436-7-8: *Wagner speculae*—Used in gynecological conditions. Placed in the patient and then lamp is brought up after a Sharpe localizer No. 2440 is put on the Kromayer. The small size A is also used in rectal work the same way.

2411: *Prostatic*—Placed on lamp and then directed in rectum, may be used in vaginal work to reach cervix.

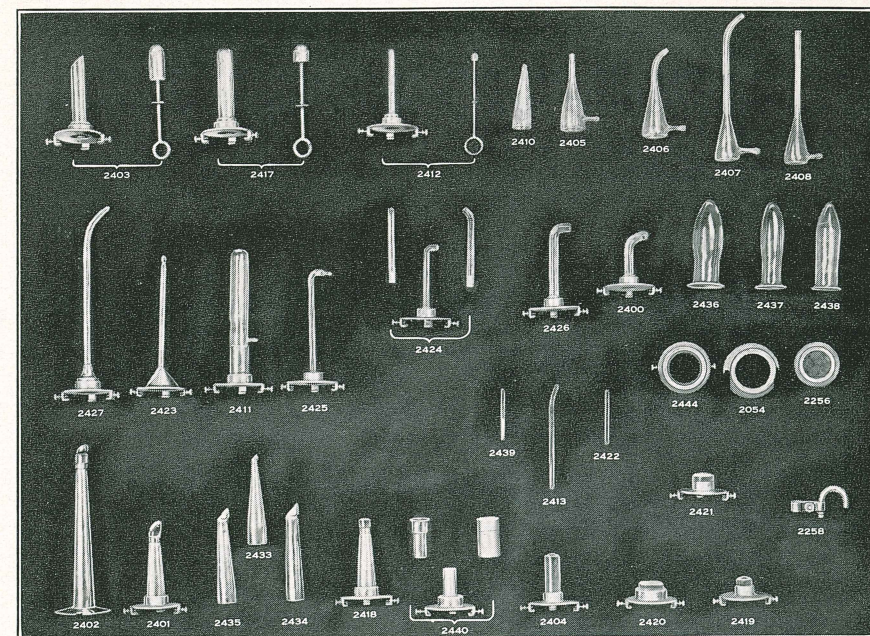
2424: *Sampson Pyorrhea rods*—The popular type of pyorrhea applicators. The straight and 45° rods used in treating gonorrheal conjunctivitis.

2425—Used in hay fever.

2422: *Quartz rod 2 3/4" long*—Used principally in the outer ear, eczema and furunculosis, etc., about 6 mm. diam.

2423: *Long quartz rod 6 3/4" long*—Used in empyema, etc., about 6 mm. diam.

2256: *Mica window*—Shuts off the ultraviolet when lamp is lighted, but not being applied to patient.



SOME OF THE STANDARD APPLICATORS NOW IN USE

2439: *Weaver applicator*—Small rod about 3 mm. diam., used in children's ears and small sinuses.

2259: *Quartz lamp window*—For the front end of Kromayer, always put the bevel edge outwards. If leak occurs at window put in a new rubber gasket. Don't screw too tightly or you may crack the window.

2440: *Sharpe localizer*—Three open cylinders for confining the rays to a small area, as in boils, etc.

2412: *Sinus applicator*—Used in tubercular sinuses.

2417: *Plank Proctoscope*—Some practitioners prefer the

small size A of 2412 and ray the entire colon, after putting one of the 2440 localizers on the lamp. The applicator is inserted in the patient and the lamp then brought up and clamped to the proctoscope.

2418: *Pharyngeal applicator*—Used in tonsillar conditions.

2401: *Baldwin laryngoscope*—Used in tubercular laryngitis.

2403: *Prostatic applicator*—For prostatitis, applied to patient and then lamp is brought up by hand.

2413: *Nasal applicator*—Used in hypertrophied turbinates, etc.

2405-6-7-8—*Ladabeck irriga-*

tors—Used in tuberculous sinuses, distilled water is passed into the sinus and the lamp applied at back of each irrigator.

PENETRATIVE PROPERTIES OF ULTRAVIOLET

Ultraviolet rays shorter than those of sunlight (2800 Angstrom units), penetrate through non-dehematized living tissue of about 2 mm. thickness and ultraviolet of sunlight (longer than 3000 Angstrom units) through 3 to 4 mm. Preserved dead tissue, because of coagulation and chemical changes, is very much more opaque than living tissue.

However, dead tissue that has not been preserved, in undergoing putrefaction transmits somewhat better than normal living tissue.

The penetrating power of ultraviolet is largely responsible for the results obtained by researches conducted by Hess in New York and Steenbock in Wisconsin, who have definitely established that cholesterol is rendered antirachitic by exposure to ultraviolet. The phenomenon appears to be a chemical change produced by the action of wave-lengths shorter than 3000 A.U. This reaction probably has an important relationship to the preventative and curative influence of ultraviolet radiations in rickets, for cholesterol is a common constituent of the skin and blood, and these radiations have sufficient penetrative power to act on the cholesterol of the body.

Medical References:

D. I. Macht, F. K. Bell and C. F. Elvers.

From the Pharmacological Laboratory and The Brady Uro. Inst. Johns Hopkins Univ., Balto., Md. Vol. XXIII, Dec., 1925, No. 3. Proceedings of Society for Experimental Biology and Medicine.

Hess and Weinstock, Proc. Am. Pediat. Soc., June 7, 1924; Am. J. Dis. Child. 28, 256 (1924); Proc. Soc. Exp. Biol. & Med. 22, 5.6 (1924-5); J. Biol. Chem. 64, 181, 193 (1925).

Hess, Weinstock, and Helman, Proc. Soc. Exp. Biol. & Med., 22, 227 (1924-25); J. Biol. Chem. 62, 301 (1924-25); *ibid.* 63, 297, 305 (1925).

Steenbock, Science, 60, 224 (1924).

Steenbock and Nelson, M. T., J. Biol. Chem., 62, 209 (1924-25).

Steenbock, Black, Nelson, E. M., Nelson, M. T., and Hoppert, J. Biol. Chem., 63, 25 (1925).

Steenbock and Daniels, Amy, J. Am. Med. Assoc., 84, 1903 (1925).

PUBLISHED BOOKS ON ULTRAVIOLET THERAPY

We heartily recommend that the physician initiating the employment of ultraviolet light procure for himself authoritative books on the subject. Many of these books contain information that is practical, enlightening and valuable, and they form a source for constant reference.

Naturally with our thirty years of experience in the manufacture of Quartz Light apparatus we have been in intimate contact with the profession, and can very well appreciate its problems. We know these problems are fully discussed in our suggested list of readings, and urge our friends to procure these books *in toto* or in part for their libraries.

We have stocked a number of the following books for your convenience, and shall be glad to supply them at the regular publishers' price. All of them can be secured directly from the publishers.

"Ultra Violet Light," by Dr. Hugo Bach (Bad Elster). Paul B. Hoeber, publisher. \$1.50.

"Physiotherapy, Therapy and Clinical Application," Harry Eaton Stewart, M.D. Paul B. Hoeber, Inc., publishers. \$7.50.

"Clinical Application of Sunlight and Artificial Radiation," by Edgar Mayer, M.D. Williams & Wilkins Co., publishers.

"Physiological Effects of Radiant Energy," by Henry Laurens, Ph.D. Chemical Catalog Co., publishers.

"Handbook of Physical Therapy." American Medical Association, publishers.

"The Chemical Action of Ultraviolet Rays," by C. Ellis and A. A. Wells. Chemical Catalog Co., publishers.

"Diseases of the Skin," by George C. Andrews, M.D. W. B. Saunders Co., publishers.

"Electrotherapy and Light Therapy," by R. Kovacs, M.D. Lea & Febiger, publishers.

"Light Therapy," by Frank H. Krusen, M.D. Paul B. Hoeber, Inc., publishers.

"Light Treatment in Surgery," by O. Bernhard, M.D. Edward Arnold & Co., London, publishers.

"Das Quarzlicht," by F. Thedering, M.D.

"Les Rayons Ultraviolet et associes en Therapeutique," by J. Saidman, M.D.

"Ultraviolet Radiations and their Uses," by Robert Aitken, M.D. Oliver & Boyd, Edinburgh, publishers.

WARNING

Use only ABSOLUTELY PURE Alcohol, Ether, Water or "Alpine Cleansing Fluid" for cleansing burner arc tube.

Denatured and Medicated Alcohol, Impure Carbon Tetrachloride, Ether, or Water MUST NOT be used, as serious damage to burner will result.

If PURE wash liquids are not available, clean burner by breathing on cold arc tube and wipe carefully with dry cheesecloth or handkerchief.

INDICATIONS AND SUGGESTED TECHNIQUE

In several of the following indications will be found the notation to refer to another indication, but in most part, the particular technique for it will be given. Where the references are entirely referred, it has been because it is essential that the other technique matter be read.

In most cases the suggestion to allow the reaction to clear up before repeating will be noted. This is a general rule, and may be followed in most cases.

(See also Contra-indications, page 50.)

Abscess

Marked success is reported in aborting infection and preventing abscess formation as well as in treating chronic abscesses. With chronic abscesses it is essential that drainage be first established.

Technique: Kromayer—First to second degree erythema locally with appropriate applicator using compression.

Alpine—General tonic treatment or second degree local.

Medical Reference: Dr. Arthur E. Schiller, Detroit, J. Mich. State Med. Soc., June, 1922. Dr. T. J. Howell, M. B., Ch. B., Case Reports, Lancaster, England, 1920-22. Dr. Edwin L. Libbert, Radiant Heat as Adjuvant Therapy, Brit. J. of P. M. Austin Furniss, L. R. C. P., L. R. C. S., L. D. S., D. P. H. Med. Press and Circular, Aug. 1, 1934. James H. Daly, D. D. S., D. M. D., and Frederick W. Lake, D. M. D., Dental Survey, June, 1929.

Acanthosis Nigricans

"Where no other remedy availed, the juvenile form caused by some form of irritation of the abdominal sympathetic yielded readily to intensive Alpine Sun Treatment."

Technique: Alpine—Third degree erythema. Local application. Distance 10 inches.

Medical Reference: Dr. Fred Wise, N. Y. Med. J., Feb. 3, 1917.

Acholia

(See Celiac Disease.)

Acne Vulgaris

Erythema doses of ultraviolet radiation once or twice a week, or daily if tolerance is high will often cause the eruption to improve or disappear, but, without proper attention to diet and hygiene or possible internal disturbances, recurrence is the rule. See: Ultraviolet in Dermatology—G. M. MacKee.

In pustular acne it is well to evacuate pustules before treatment, cleansing with alcohol so that the area treated will be entirely free from foreign matter. According to the delicacy of the skin of the patient to be treated, expose each side of the face as indicated below.

Technique: Kromayer—Third degree erythema at 2½ inches. Allow reaction to clear up and repeat. For treating extensive areas the Alpine Sun Lamp will be found more convenient. **Medical Reference:** Dr. A. Jordon, Northwest Med., Jan., 1917. Dr. E. L. Oliver, Boston Med. & Surg. J., p. 155, Aug. 5, 1920; J. of the A. M. A., Aug. 19, 1922. Dr. C. A. Simpson, Washington, D. C., Southern Med. J., Oct., 1918. Dr. William L. Clark, Philadel-

phia Therapeutic Gazette, May 15, 1916. Dr. Howard Fox, New York City, J. of the A. M. A., Oct. 27, 1923, p. 1417. Discussion by Drs. Ayres and Scholtz of Los Angeles. John Butler, M. D., Arch. Dermat., Jan., 1924. E. W. Hirsch, M. D., Am. J. Clin. Med., June, 1922. Fred Wise, M. D., N. Y. Med. J., Feb. 3, 1917. E. L. Oliver, M. D., Boston, Aug. 5, 1920. J. J. Ellor, M. D., The Bacterial Therapist, Sept., 1923. John Zahorsky, M. D., Mo. St. Med. J., Feb., 1925. E. D. Chipman, M. D., J. A. M. A., Sept. 27, 1924. C. Lee McCarthy, M. D., Med. J. & Record, May 4, 1925. L. J. Carter, M. D., Canadian Med. Assn. J., Feb., 1925. E. F. Traub, Med. J. & Record, July 15, 1925. Dr. George M. MacKee, J. A. M. A., Apr. 30, 1932. C. M. Henry, M. D., C. M., F. A. C. S., The Canadian Med. Assn. J., Dec., 1931. Sir. Leonard Hill, LL.D., M. B., F. R. S., Brit. J. of Phy. Med., Sept., 1931. George M. Lewis, M. D., Arch. of Phy. Ther., X-Ray, Radium, Aug., 1932. H. Harris Perlman, M. D., P. D., Brit. J. of Phy. Med., Feb., 1932. E. Mayer, A. M. A., Jan. 16, 1932.

Acnitis

Favorable reports have been made in this disease.

Technique: Alpine—Second degree erythema, 10 inches.

Medical Reference: Dr. H. E. Alderson, Clinical Professor of Medicine, Stanford University, San Francisco, Cal., Arch. of Dermat. and Syph., July, 1922.

Acrodynia

Daily mild irradiations with the Alpine Sun Lamp are reported to give the most favorable results in the treatment of Acrodynia when used in conjunction with suitable management of the case.

Technique: First degree erythema dose administered daily.

Medical Reference: Dr. Frank Thomas Mitchell, Southern Med. J., Mar., 1928, Vol. XXI, No. 3. Dr. Reuben A. Craig, Arch. of Pediatrics, Sept., 1927. Dr. R. Turquety, Am. J. Diseases of Children, Mar., 1929, Vol. 37, No. 3. Dr. S. J. McClendon, Am. Med. Assn. J., Aug. 10, 1929, Vol. 93, No. 6. Edi-

Acrodynia (Continued)

torial, The Canadian Med. Assn. J., Mar., 1932, Vol. XXVI, No. 3. Dr. Austin Furniss, The Med. Press and Circular, Nov. 15, 1933, Vol. CXXXVI. Dr. A. J. Scott, Jr., California and

Western Medicine, July, 1926, Vol. XXV, No. 1. Dr. Gordon Chown, Winnipeg, Man., Northwest Medicine, Vol. XXVI, No. 5, 1927.

Adenitis (Tuberculous)

"The Glands gradually disappear" under compression with lens in contact with Kromayer Lamp and general body radiations with Alpine Sun Lamp. **Technique:** Alpine—Second degree erythema. General body treatment.

Kromayer—Third degree erythema, locally.

Medical Reference: Dr. A. E. Schiller, Detroit, J. Mich. State Med. Soc., June, 1922. Report of the Central Tuberculosis Officer of the Lancashire County Council for the year 1931. G. L. Cox, British J. Actinotherapy and Physiotherapy, Oct., 1930.

Adenoma Sebaceum

Dr. Howard Fox says that "The usual methods of treatment are unsatisfactory, and for this reason many cases have been left untreated. Excellent results and marked improvement is reported with the Kromayer Lamp, and is much preferred to X-Ray."

Technique: Kromayer — Third or fourth degree erythema. Distance 4 inches.

Medical Reference: Dr. Rulison, presented by Dr. Highman at N. Y. Der-

mat. Soc., April 25, 1922; discussion by Drs. Trimble and Howard Fox. Dr. Highman, Arch. of Dermat. and Syph., June, 1923, p. 841, and discussion by Drs. Howard Fox, Rulison and Fred Wise. Dr. Geo. M. MacKee, "X-Rays and Radium in the Treatment of Diseases of the Skin," Lea & Febiger, 1921. Dr. Edgar Mayer, Am. Med. Assn. J., Jan. 16, 1932. Dr. Geo. M. Lewis, Med. J. & Record, Sept. 2, 1931. Dr. Geo. M. MacKee, J. of the A. M. A., April 30, 1932.

Alopecia Areata

Satisfactory results are often obtained by the production of a powerful erythema, even to vesication. The treatment must be given systematically and with due regard to the existing conditions. The sensitiveness of the patient's skin to the light rays will also in some measure influence the procedure.

The most favorable prognosis is, of course, presented by cases of recent development, that is, cases in which no extensive atrophy of the follicles has occurred. Where the area affected is at all extensive, the treatment may be given more simply and in much shorter

time by means of the Alpine Sun Lamp. On small areas, however, the Kromayer Lamp can be conveniently applied without applicators. **Technique:** Alpine—Third to fourth degree erythema, 10 inches distance. Protect patient's forehead and ears from rays.

Kromayer—Third degree erythema locally for small areas.

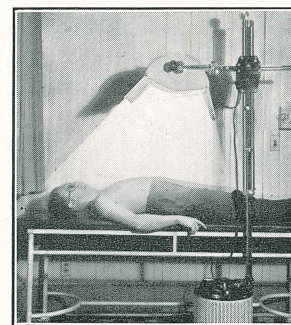
Medical Reference: Dr. Howard Fox, N. Y., Arch. Dermat. and Syph., July, 1921, p. 535; also J. of Cut. Dis., Oct., 1917. Dr. W. J. MacDonald, Boston Med. and Surg. J., Vol. 188, No. 21, p. 809, May 24, 1923. Dr. E. L. Oliver,

Alopecia Areata (Continued)

Boston, Boston Med. and Surg. J., Vol. CLXXXIII, No. 6, p. 155, Aug. 5, 1920; also in the J. of the A. M. A., Aug. 19, 1922. Dr. R. W. Muller, "Loss of Hair" and "Baldness, Its Prevention and Cure," E. P. Dutton, New York. Dr. Fred Wise, New York City, N. Y. Med. J., Feb., 1917. T. Clyde McKenzie, M. D., Ch. B. and Irvin C. Suttan, M. D., The Am. J. Physiotherapy, June, 1925. G. B. Eusterman, M. D., Ohio St. Med. J., Nov., 1924. C. D. Collins, M. D., Am. Inst. of Homeo., June, 1918. Alfred Schalek,

M. D., The Ur. & Cut. Rev., Vol. XXII, No. 5, 1918. A. E. Rayner, O. B. E., M. D., B. Ch., British J. of Phys. Med., Sept., 1933. Donald J. Wilson, A. B., M. D., Arch. of Phy. Therapy, X-Ray, Radium, Sept., 1932. Dr. Narducci, J. A. M. A., July 26, 1930. E. J. MacIntyre, M. D., Brit. J. of Phy. Med., June, 1933. Austin Furniss, M. D., Brit. J. of Phy. Med., Nov., 1933. H. Jansion, R. Sohler and Antonelli, Bull. Soc. Franc. de Dermat. et Syphil., Dec., 1929.

Anemia, Secondary



Ultraviolet radiation has been found effectual in hemorrhagic anemia in patients. It has been shown in controlled experiments on mice and on dogs to increase the red cells within a few days after the first exposure. See: "Physiological Effects of Radiant Energy"—H. Laurens.

Hobert, 1923 (Klinische Wochenschrift) bled mice and found a stimulation of the hematopoietic organs when the mice were exposed to ultraviolet radiation (10 to 11 days for complete restoration compared with 14 days when kept in daylight).

Tixier (Journal de Radiol.) found ultraviolet radiation effectual in hemorrhagic anemia in adults.

Bannerman, 1927 (Strahlen Therapy) in studying non-tuberculosis or-

thopedic cases found that although the response of the red cells during the irradiation period may vary there is a greater or less increase in the count during the post irradiation period and the effects are too pronounced and lasting to be due to any other factor than the radiation.

Laurens & Myerson, 1931 (Jour. of Nutrition) studied the effect of ultraviolet on dogs made anemic by hemorrhage. The most pronounced effects were on the number of erythrocytes and reticulocytes with no corresponding change in hemoglobin formation. Irradiation was followed by an increase in red cells. The rise usually began immediately or within a few days after the first exposure.

Technique: First degree erythema dose four to six times per week.

Medical Reference: Dr. Victor E. Levine, Arch. of Phy. Ther., X-Ray, Radium, July, 1931. Editorial, Arch. of Phy. Ther., X-Ray, Radium, July, 1931. Dr. D. I. Macht, The Brit. J. of Actinotherapy & Physiotherapy. Dr. Eneas J. Macintyre, Brit. J. of Phy. Med., June, 1933. H. Harris Perlman, Brit. J. of Phy. Med., Feb., 1932. Sir Leonard Hill, Brit. J. of Phy. Med., Sept., 1931. Dr. Edgar Mayer, Am. Med. Assn. J., Jan. 16, 1932. Dr. Aus-

Anemia, Secondary (Continued)

tin Furniss, Brit. J. of Phy. Med., Nov., 1933. Dr. J. E. Reuth, Arch. of Phy. Ther., Jan., 1933. Dr. Francis E. Dill, Okla. State Med. Assn. J., Oct., 1932. Dr. David I. Macht, Science, Mar. 21, 1930. Dr. Richard Kovacs, N. Y. State J. of Med., Aug. 15, 1935. Dr. Austin Furniss, The Med. Press and Circular, Nov. 15, 1933. Dr. Hobert, Klinische Wochenschrift, 1923. Dr. Tixier, J. de Radiol, VII. 355. R. G. Bannerman, Brit. J. Exper. Path., 1924. 5. 16. Laurens & Myerson, J. of Nutrition, 1931.

Angioma and Angioma Cavernosum

(See Naevus and Telangiectasis.)

Technique: Kromayer—Intense fourth degree erythema, contact with firm compression, using quartz lens. Cover surrounding skin for subsequent treatments, so that the areas treated do not overlap. Allow to clear up and repeat. **Medical Reference:** E. D. Chipman, M. D., J. A. M. A., Sept. 27, 1924. Fred Wise, M. D., N. Y. Med. J., Feb.

3, 1917. Ophthalmology & Otolaryngology, April, 1930. Dr. E. Kromayer, J. A. M. A., Oct. 1, 1932. Dr. Herbert E. Coe, J. of Pediatrics, Aug., 1933. Dr. S. Lomholt, Medical Times and Long Island Med. J., Dec., 1931. Geo. M. Lewis, Arch. of Phy. Ther., Aug., 1932. Albert Eidinow, Brit. Med. J., Oct. 26, 1935.

Angioma Serpiginosum

This rare cutaneous disorder, for which there is no other known successful remedy, yields readily to intensive treatment.

Technique: Kromayer—Fourth degree erythema locally, contact, also at 2½

inches distance on small areas.

Medical Reference: Dr. Fred Wise, New York City, N. Y. Med. J., Feb. 3, 1917; also in J. of Cutan, Dis., 1913. Dr. E. D. Chipman, San Francisco, J. A. M. A., Sept. 27, 1924, Vol. 83, No. 13, p. 971.

Arthritis

Since Sir Humphrey Rolleston, President of the Royal College of Physicians, called the attention of the British Medical Association in 1925 to the value of ultraviolet radiation in the treatment of arthritic conditions, many clinicians have emphasized its importance in their publications on this subject.

Dryer & Reed in 1935 found clinical improvement in 44 cases, no improvement in 13, and results still uncertain in 10 cases of various types of arthritic patients following massive doses of viosterol (Vitamin D) which may explain the favorable effects of ultraviolet radiation in cases of this type.

Technique: Alpine—First degree erythema. General tonic radiations; with second or third degree erythema reaction around joint, at 10 inches distance when such reaction will not interfere with other treatments. Allow reaction to clear up and repeat.

Medical Reference: Rheumatoid Arthritis, its causation and treatment, Sir Humphrey Rolleston, Canadian Med. J., Sept., 1925. Arthritis, J. C. Elsom, Arch. of Phy. Ther., June, 1930. Arthritis, Henry Keller, Med. J. & Record, Oct. 7, 1931. Chronic Rheumatic Joint Disease, Philip Elman, Brit. J. of Phy. Med., Nov., 1932. Arthritis (Discussion), W. J. Kerr, Am. Med. Assn. J.,

Arthritis (Continued)

Oct. 14, 1933. Use of Physiotherapy in Arthritis, R. L. Jeffery, Physiotherapy Review, Feb., 1930. Physical Therapy in Chronic Arthritis, R. Kovacs, Med. J. and Record, Nov. 15, 1933. Treatment of Arthritis, I. Dreyer & C. I. Reed, Arch. of Phy. Ther., X-Ray, Radium, Sept., 1935. Hypertrophic and Gonorrheal Arth., Dr. A. H. Bingham, New York, paper read at Acad. Path. Sci., N. Y., Dec. 27, 1918. "The Sun Lamp in Orthopedics," by Anson H. Bingham, M. D., read at the Academy of Pathological Science, N. Y. City. Pneumococci, arthritis, and peri-arthritis, deformans and decubitus, Dr. A. E. Schiller, Detroit, J. Mich. State Med. Soc., June, 1922. F. T. Woodbury, M. D., Am. J. Electro. & Radiology,

April, 1924. C. A. Simpson, M. D., Southern Med. J., Oct., 1918. C. Benoit, M. D., Am. J. Electro. & Radiology, Oct., 1923. Dr. Richard Kovacs, Med. J. & Record, Dec. 6, 1933. Dr. Edwin O. Geckeler & Carl V. Vischer, M. D., F. A. C. P., Hahnemannian Monthly, Jan., 1931. Dr. Joseph Echtman, Med. Times and Long Island Med. J., June, 1935. Dr. R. L. Jeffery, The Physiotherapy Review, Jan.-Feb., 1930. Dr. W. J. Kerr, J. A. M. A., Oct. 14, 1933. Dr. Disraeli Kobak, Arch. of Phy. Ther., X-Ray, Radium, April, 1933. Dr. Richard Kovacs, Med. J. and Record, Nov. 15, 1933. Queries and Minor Notes, Am. Med. Assn. J., Dec., 1933. Dr. J. C. Elsom, Arch. of Phy. Ther., X-Ray, Radium, June, 1930.

Asthma

Despite the conflicting prevalent ideas regarding the etiology and treatment of asthma, there seems good reason to believe that the Alpine Sun Lamp, by virtue of its action on the nervous system as well as its stimulating effect on body metabolism and calcium and phosphorus content of the blood, may prove of value in the treatment of this disease. One author claims that he has had conspicuous success with the Alpine Sun Lamp in the treatment of bronchial catarrh, emphysema and bronchitis, and in bronchial asthma. Other reports show gratifying results and surprising relief in severe cases of bronchial asthma.

Technique: Alpine—First degree erythema, tonic dose.

Kromayer—First to second degree erythema locally. (See Hay Fever.)

Medical Reference: Dr. Hugo Bach, "Ultra-Violet Light," Paul Hoeber, 1916. Dr. A. R. Hollender, Chicago, Am. J. Clin. Med., April, 1924; also J. A. M. A., Dec. 15, 1923, 81:2003; also in J. of O. O. and L., Aug., 1924. Drs. F. J. Novak and A. R. Hollender, in Illinois Med. J., April, 1924. A. R. Hollender, M. D., Maurice H. Cottle, M. D., Med. Herald and Physiotherapist, July, 1925. R. H. Kuhns, B. S., M. D., Arc. of Pediatrics, Feb., 1925. Glassman, Am. Physician, April, 1925. J. L. Myers, M. D., Am. J. Elec. & Rad., Dec., 1925. Dr. J. Saidman, J. A. M. A., Sept. 14, 1929. Dr. E. J. MacIntyre, Brit. J. of Phy. Med., June, 1933. Dr. Geo. H. Day, Brit. Med. J., Jan. 4, 1936. Dr. Carl B. Spath, Arch. of Phy. Ther., X-Ray, Radium, Nov., 1930. Dr. Edgar H. Wilkins, Medical Officer, Sept. 27, 1930. Asthma Research Council, Report of Progress, May 31, 1930.

Bazin's Disease

(See Erythema Induratum.)

Medical Reference: Dr. Joseph Echtman, Arch. of Phy. Ther., X-Ray, Radium, Nov., 1934.

Boils

(See Furunculosis.)

Gratifying results reported, usually clear up in one treatment. Drainage should be established.

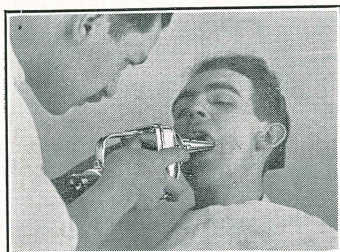
Technique: Kromayer—Fourth degree erythema under firm compression.

Alpine—Third to fourth degree erythema locally.

Medical Reference: Dr. I. O. Denman, E. E. & N. & T. Monthly, March, 1923. Dr. Post, Chicago, Lecture St. Ann's Hospital, 1920. Dr. Hugo Bach, "Ultra-Violet Light," Paul Hoeber, 1916. Dr.

G. J. Warnshius, Arch. of Phy. Ther., X-Ray, Radium, Nov., 1931. Dr. J. E. Reuth, Arch. of Phy. Ther., X-Ray, Radium, Jan., 1933. Geo. M. MacKee, J. A. M. A., Apr. 30, 1932. Sir Leonard Hill, The Brit. J. of Phy. Med., Sept., 1931. Dr. Eneas J. Macintyre, The Brit. J. of Phy. Med., June, 1933. Dr. Edwin L. Libbert, Brit. J. of P. Med., Feb., 1933. Dr. Geo. M. Lewis. Dr. H. Harris Perlman, Brit. J. of Phy. Med., Feb., 1932.

Bronchitis, Bronchial Asthma and Bronchial Catarrh



THE KROMAYER LAMP BEING USED IN TREATING BRONCHITIS

Beneficial response is reported in these diseases.

Technique: Alpine—First to second degree erythema. General body tonic dose in conjunction.

Kromayer—First to second degree erythema locally.

Mederal Reference: Dr. Austin Furniss, The Brit. J. of Phy. Med., Nov., 1933. Dr. Edgar H. Wilkins, The Med. Officer, Sept. 27, 1930. Dr. Richard Kovacs, Clin. Med. and Surg., Jan., 1932. Samuel I. Muller, M. D., N. Y. State J. of Med., Jan. 1, 1932. H. Harris Perlman, M. D., P. D., Brit. J. of Phy. Med., Feb., 1932.

Bruises and Hematomata, Traumatic Injuries

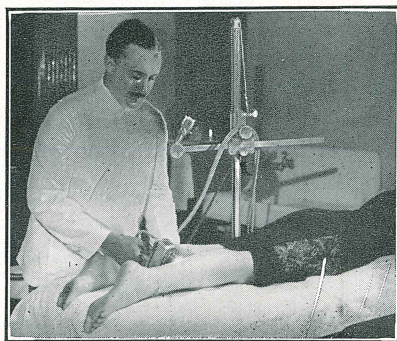
A short exposure to the rays of the Kromayer Lamp, sufficient to promote an increased circulation locally over the affected areas, reduces pain and stiffness, and leads to a marked increase in the rate of absorption.

Bruises heal more rapidly as reported by many authorities.

Technique: Kromayer—Second degree erythema locally.

Alpine—Second degree erythema generally.

Medical Reference: Dr. Hugo Bach, "Ultra-Violet Light." Dr. Paul Hoeber, 1916. Dr. I. O. Denman, Eye, Ear, Nose and Throat Monthly, March, 1923. Dr. J. C. Elsom, Arch. Phy. Ther., X-Ray, Radium, Aug., 1934.



KROMAYER COMPRESSION TREATMENT USED FOR DISINFECTING BRUISE

Burns

(See also X-Ray Burns.)

Burns with large blisters from gasoline and oil explosion, showed burning and pain immediately removed. Similar success is reported with X-Ray burns.

Technique: Alpine—First degree erythema.

Kromayer — First degree erythema locally.

Medical Reference: Dr. A. E. Schiller, Detroit, J. Mich. State Med. Soc., June, 1922. Dr. Willis S. Peck, Arch. of Phy. Ther., X-Ray, Radium, June, 1931. Dr. J. U. Giesy, Med. Herald, Feb., 1932. J. M. Thomas, J. A. M. A., Nov. 4, 1933. Dr. Hugo Bach, Die Medizinische Welt, 1935, No. 7. Austin Furniss, Med. World, Sept. 20, 1935.

Bursitis

Favorable results are reported by several clinicians.

Technique: Kromayer—Third degree erythema applied locally.

Alpine—Third degree erythema applied locally.

Medical Reference: Dr. A. H. Bing-

ham, New York City, read at Acad. of Path. Sci., "The Sun Lamp in Orthopedics," Dec. 27, 1918. Austin Furniss, Med. Press and Circular, Nov. 15, 1933, Vol. CXXXVI. Dr. Joseph Echtman, Med. Times and L. I. Med. J., June, 1935.

Catarrh of the Cervix Uteri

Technique: Kromayer—Second degree erythema. Direct exposure where possible.

Alpine—General tonic radiation. Second to third degree erythema.

Medical Reference: Austin Furniss, L.

R. C. P., Brit. J. of Phy. Med., Oct. & Nov., 1932. Wilhelm Flaskamp, M. D., Am. J. of Phy. Ther., Jan., 1930. Dr. Joseph E. G. Waddington, Arch. of Phy. Ther., X-Ray, Rad., Apr., 1930. Frank H. Walke, M. D., Am. J. of Phy. Ther., May, 1931.

Celiac Disease

At the scientific exhibit of the University of Illinois at the A. M. A. meeting, Chicago, June, 1924, Dr. Julius Hess (Prof. of Pedr., University of Ill., Chicago), announced that numerous favorable results had been obtained in cases of celiac disease, which had been treated with the Alpine Sun

Lamp.

Technique: Alpine—First degree erythema.

Medical Reference: Dr. Michelmores, J. A. M. A., Feb. 26, 1927. Dr. Ralph G. Michelmores, The Lancet, Dec. 18, 1926.

Cervical Lymph Glands (Tuberculous)

In view of the universally recognized importance of quartz light therapy in this particular manifestation, it seems

worthy of special notice. Many brilliant cases have been reported from time to time, and authoritative writers

Cervical Lymph Glands (Tuberculous) (Continued)

prefer this treatment to surgical operations where such can possibly be avoided. Where surgical operation is necessary, subsequent treatment with the Alpine Sun Lamp has proven of great service. In most cases a course of general radiations may advantageously be combined with the local treatment of the lesions.

A careful study of each individual case should be made accurately to adapt the dosage to the tolerance of the patient. Where the patient shows otherwise normal physical condition there will generally be found a better tolerance for the ultraviolet rays.

Technique: Alpine—General tonic dose; distance about 12 inches. Allow

reaction to subside and repeat, strengthening dosage slightly.

Kromayer—Compression treatment locally, giving a second degree erythema.

Medical Reference: Dr. A. H. Bingham, "Sun Lamp in Orthopedics," read at Acad. of Path. Science, New York City, Dec. 27, 1918. Dr. A. E. Schiller, J. Mich. Sta. Med. Soc., June, 1922. Dr. E. M. Eberts, Canadian Med. Assn. J., Jan., 1933. H. Harris Perlman, M. D., P. D., Brit. J. of Phy. Med., Feb., 1932. G. L. Cox, Am. Review of T. B., March, 1932. Edgar Mayer, M. D., Clinical Application of Sunlight & Artificial Radiation, Williams & Wilkins.

Cicatrix

(See Keloid.)

Technique: Kromayer—Third degree erythema, contact with firm compression, using quartz lens applicator. Al-

low reaction to clear up and repeat.

Medical Reference: Geo. M. MacKee, J. A. M. A., June, 1932.

Colpitis Granularis

Technique: Alpine—General radiations always indicated and local if accessible.

Kromayer—Second degree erythema, using the medium Sharpe Localizer or the McCaskey Prostatic Applicator. Allow few days to clear up and repeat.

Medical Reference: Austin Furniss, L. R. C. P., Brit. J. of Phy. Med., Oct. & Nov., 1932. Frank H. Walke, Am. J. of Phy. Ther., May, 1931. Dr. Joseph Echtman, Med. Times and L. I. Med. J., June, 1935.

Conjunctivitis, Phlyctenular

The Kromayer Lamp is best suited, but equal results are recorded with Alpine Sun Lamp. Careful localized treatments should be administered.

Technique: Fifteen seconds at about

eighteen inches—increasing time and shortening distance gradually at subsequent treatments. Treatments every three or four days, allowing reaction to subside and repeat.

Corneal Ulcer

Recent clinical studies have established the importance of ultraviolet in the therapy of this condition.

Technique: Alpine Sun Lamp—First

inches, increasing dosage at subsequent treatments, allowing reaction to degree erythema at about eighteen subside and repeat.

Corneal Ulcer (Continued)

Medical Reference: Dr. Spero, Eye, Ear, Nose and Throat Monthly, Sept., 1932. Drs. J. S. Coulter & E. M. Smith, Clin. Med. & Surg., Feb., 1932. Oscar B. Nugent, J. of the Oklahoma State Med. Assn., March, 1932. Dr. O. B. Nugent, J. A. M. A., Jan. 16, 1932.

Editorial, Arch. of Phy. Ther., X-Ray, Radium, Dec., 1930. Dr. O. B. Nugent, Arch. of Phy. Ther., X-Ray, Radium, March, 1931. Oscar B. Nugent, Arch. of Phy. Ther., X-Ray, Radium, Jan., 1933.

Coxitis, Tuberculous

Rollier reports favorable results in this condition.

Technique: Alpine—First degree erythema, general body radiations.

Medical Reference: Dr. Rollier, Ley-sin, Switzerland, Zeit für Baln, Vol. IV, No. 1. Drs. A. M. Lehman & D. C. Bartholomew, J. A. M. A., April 16, 1932.

Dermatitis Venenata

Particularly of the ivy poison type, responds readily to treatment with the Alpine Sun Lamp. The painful stinging and burning is usually relieved after the first or second exposure. The rays appear to stop the spread of the disease, and should be administered over the surrounding skin as well as the actual lesion.

Whether resulting from irritation, produced by various chemicals or plant of the Rhus or other species, responds readily to the Kromayer Lamp.

Technique: Alpine—General body radiations, giving a good second degree erythema. Distance 30 inches, gradually decrease distance at subsequent treatments.

Kromayer—Second degree erythema. Treat daily until cleared up.

Medical Reference: Dr. R. Bernstein, Philadelphia, "Ultra-Violet Rays in Modern Dermatology," Achey and Gorrecht, 1918. Dr. W. J. MacDonald, Boston, Med. and Surg. J., May 24, 1923. Dr. Austin Furniss, Med. World, Sept. 28, 1934.

Diphtheria Carriers, Sterilizing

It is reported that one treatment sterilizes in 50% of cases, and that none requires more than three treatments.

Technique: Kromayer—In contact, using nasal rod. Second degree erythema, withdrawing rod gradually at ½-inch intervals, treating each place.

Repeat, increasing subsequent dosage slightly.

Medical Reference: Dr. L. C. Donnelly, Detroit, in J. of the Mich. State Med. Soc., Sept., 1921. Am. J. of Electro and Radiol., Nov., 1921. Dr. Francisco Formigal Luzes, "Strahlentherapie," Vol. 45, 1932. Dr. F. L. Wahrer, Arch. of Phy. Ther., Sept., 1932.

Eczema

Excellent results have been secured in treating this disease by both the Alpine Sun and Kromayer Lamps. For the most part, mild dosage is sufficient

in acute cases. Deeply infiltrated and heavily incrustated lesions require longer exposure to produce the same reaction. Before raying, any heavy crusts should

Eczema (Continued)

be carefully removed, as they will absorb most of the rays falling upon them. In rare instances of eczema rubrum, which become aggravated by sun exposure, Quartz Light would seem to be contraindicated.

General radiation of the entire body with the Alpine Sun Lamp concurrently with the local treatment is strongly recommended in chronic cases.

Technique: Alpine—Eczema (Acute): General tonic radiation; when about cleared up, give a light third degree erythema for final clearing up. Lamp at about 30 inches, decreasing gradually to about six inches.

Eczema (Chronic): Third or fourth degree erythema from start at about 30 inches.

Allow reactions to clear up and repeat.

Kromayer (Acute): Second degree erythema at 2½ inches. Allow reaction to clear up and repeat.

For Chronic, Scaly or Dry Eczema. Third to fourth degree erythema at 2½ inches. Allow reaction to clear up and repeat.

Medical Reference: Aural Eczema, Dr. W. C. Barker, Phila., Am. J. Elect. & Radiol., Aug., 1922. Dr. C. S. Thompson, Chief of Clinic U. S. Vet. Bur.,

Newark, in Am. J. of Elect. & Radiol., July, 1923. Aurol Eczema, Dr. I. O. Denman, E. E. N. T. Monthly, Mar., 1923. Dr. W. J. MacDonald, Boston, Med. and Surg. J., May 24, 1923. F. A. Davis, M. D., Med. J. & Record, Oct. 19, 1925. T. C. McKenzie, M. B., Ch. B. & I. C. Suttan, M. D., Am. J. Phy. Ther., June, 1925. E. D. Chipman, J. A. M. A., Sept. 27, 1924. J. Zahorsky, M. D., Missouri State Med. J., Feb., 1925. L. J. Carter, M. D., Canad. Med. Assn. J., Feb., 1925. A. S. Clark, M. D., J. Cutaneous Diseases, June, 1924. Dr. A. E. Rayner, Brit. J. of Phy. Med., Sept., 1933. Dr. C. M. Henry, The Can. Med. Assn. J., Dec., 1931. Eneas J. Macintyre, Brit. J. of Phy. Med., June, 1933. W. Annandale Troup, Brit. J. of Phy. Med., Feb., 1933. Dr. Donald J. Wilson, Arch. of Phy. Ther., X-Ray, Radium, Sept., 1932. Dr. J. E. Rueth, Arch. of Phy. Ther., X-Ray, Radium, Jan., 1933. Dr. W. Annandale Troup, The Brit. Med. J., Nov. 19, 1932. Dr. Geo. E. Percy, Am. Med., July, 1932. Dr. H. Harris Perlman, Brit. J. of Phy. Med., Feb., 1933. Dr. Geo. M. MacKee, J. of the Am. Med. Assn., Apr. 30, 1932. Carl B. Spath, Ophthalmology and Otolaryngology, Apr., 1930. Kurt Huldshinsky, Klinische Wochenschrift 8:71, Jan., 1929.

Empyema (Tuberculous)

Draining cavities may be reached by suitable applicators, using the Kromayer Lamp. Successful results have been reported in such conditions where no bronchial fistulae is present.

Technique: Kromayer—First degree erythema. Such cavities should be treated daily or twice weekly, using special applicators.

Alpine—General body tonic doses.

Erysipelas

"That ultraviolet therapy is equal, if not superior to serum therapy is, we feel very evident. Aside from the economic issue, which is an important one (cost of serum) the end results, governed by the quicker response to treatment and the fewer complica-

tions, make ultraviolet for facial erysipelas quite distinctive and indeed the method of choice." See: "Facial Erysipelas," H. J. Lavender & L. Goldman. **Technique:** Alpine distance 8 inches to 12 inches; Kromayer 2½ inches to 4 inches. Each treatment should con-

Erysipelas (Continued)

sist of 20 times the amount of ultraviolet necessary to produce a first degree erythema on normal, untanned skin. A margin of skin one inch wide surrounding the lesion should be included to prevent spreading. Repeat daily for a total of three treatments.

Kromayer—Same.

Medical Reference: Dr. Alois Czepa, New York Med. J. and Med. Record, Oct. 18, 1922, p. 485. Dr. Bernstein, Philadelphia, "Ultra-Violet Rays in Modern Dermatology," Achey and Gorrecht, 1918. J. Zahorsky, M. D., Mo. State Med. J., Feb., 1925. A. Jordan, Northwest Med., Jan., 1917. Drs. L. M. Nightingale & S. Starr, Clin. Med. & Surg., Jan., 1935. Dr. Norman Edwin Titus, The Brit. J. of Phy. Med., Dec.,

1934. Drs. H. Jerry Lavender & Leon Goldman, J. A. M. A., Aug. 10, 1935. F. M. Day, M. R. C. S., The Med. Officer, Nov. 2, 1935. Bernard Fantus, The Ther. of the Cook Co. Hos., A. M. A., Vol. 103, No. 3, July 21, 1934. Louis M. Nightingale & Saul Starr, A. M. A., Mar. 10, 1934. W. Annandale Troup, The Brit. J. of Phy. Med., Dec., 1932. Dr. Wm. H. Guillian, J. Am. Inst. of Homeo., Feb., 1933. R. King Brown, Brit. J. of Actinotherapy and Physiotherapy, Sept., 1930. Walter H. Ude & E. S. Platou, J. A. M. A., July 5, 1930. J. M. Davidson, Brit. Med. J., May 21, 1932. Geo. M. MacKee, M. D., J. A. M. A., Apr. 30, 1932. Walter H. Ude, M. D., Radiology, Dec., 1929.

Erythema Induratum (Bazin's Disease)

Excellent results were obtained in treating erythema induratum with the Kromayer Lamp.

Technique: Kromayer—Second to third degree erythema in contact without compression.

Medical Reference: Drs. H. E. Alderson and H. C. Coe, Stanford Univ. Med. School, in Calif. State J. of Med., Vol. XXII, Jan., 1924. Dr. E. L. Oliver,

Boston, Arch. of Dermatology and Syphilol., Nov., 1922, with discussion by Drs. Fred Wise, New York, and A. W. Stillians, Chicago. Dr. W. J. MacDonald, Boston Med. & Surg. J., May 24, 1923. Dr. Geo. M. Lewis, Arch. of Phy. Ther., X-Ray, Radium, Aug., 1932. Dr. Geo. M. MacKee, J. A. M. A., Apr. 30, 1932. Dr. Edgar Mayer, Am. Med. Assn. J., Jan. 16, 1932.

Erythema Pernio

Whether of a neurotic type or induced simply by cold, this condition may be quickly alleviated by applications of quartz light, and the intense itching promptly relieved. In the cases of neurotic patients, general body radiations may be administered to improve the general condition.

Technique: Alpine—Second degree erythema at 18 inches. Allow to clear

up and repeat.

Kromayer—Third degree erythema at 2½ inches. Allow to clear up and repeat.

Medical Reference: Dr. R. Bernstein, Philadelphia, "Ultra-Violet Rays in Modern Dermatology," Achey & Gorrecht, 1918. L. J. Carter, Canadian Med. Assn. J., Feb., 1925.

Folliculitis Decalvans

This condition requires strenuous treatment. Before radiating the pustules should be carefully opened and

evacuated. If the hair papillae have not already been destroyed, it is usually a matter of considerable gratifica-

Folliculitis Decalvans (Continued)

tion to the patient to observe the prompt way in which the hair falling is arrested.

Technique: Alpine—Third degree erythema at 24 inches. Allow reaction to subside and repeat, decreasing the distance to 16 inches gradually.

Kromayer—Third degree erythema at 2½ inches. Treatment every other

day to twice weekly as the condition warrants.

Medical Reference: Dr. W. J. MacDonald, Boston, Boston Med. & Surg. J., Vol. 188, No. 21, p. 809, May, 1923. Dr. R. Bernstein, Phila., "Ultra-Violet Rays in Modern Dermatology," Achey & Gorrecht, 1918. Dr. Geo. M. MacKee, J. A. M. A., Apr. 30, 1932.

Furunculosis

If taken before it begins to suppurate a boil may often be aborted by an intensive compression treatment with the Kromayer Lamp. One treatment will usually suffice.

Technique: Alpine—Third degree erythema, covering the surrounding tissue, 12 to 15 inches distance, repeat.

Kromayer—Third degree erythema. Contact under firm compression, using quartz lens. Usually not necessary to repeat treatment.

Medical Reference: Dr. I. O. Denman, Eye, Ear, N. & T. Monthly, Mar.,

1923. Dr. R. Bernstein, Phila., "Ultra-Violet Rays in Modern Dermatology," Achey & Gorrecht, 1918. Dr. Post, Chicago, Lecture read before Associated Drs. of St. Anne's Hospital, 1920. Dr. Hugo Bach, "Ultra-Violet Light," Paul B. Hoeber, 1916. Eneas J. Macintyre, M. D., D. P. H., Brit. J. of Phy. Med., June, 1933. Dr. Edwin J. Libbert, Brit. J. of Phy. Med., Feb., 1933. Dr. H. Harris Perlman, Brit. J. of Phy. Med., Feb., 1932. Dr. Geo. M. MacKee, J. A. M. A., Apr. 30, 1932. Dr. Carl B. Sputh, Ophthalmology and Otolaryngology, Apr., 1930.

Gangrene—Threatened

If the destruction process has not gone too far, mild stimulation of the affected parts by quartz light radiations may prove decidedly helpful. Good results have been reported by several writers.

Technique: Alpine—Third degree erythema at 30 inches, decreasing distance at subsequent treatment. Allow to clear up and repeat.

Kromayer—Third degree erythema

should be produced over radiated area, and as soon as erythema fades, repeat. (This can be in addition to any other treatment being administered.) Treatment, two to three times weekly, bearing in mind the patient's tolerance.

Medical Reference: D. A. Kriser, Munchener Medizinische Wochenschrift. J. Mich. Sta. Med. Soc., Mar., 1921. Dr. M. Weinbren, Brit. J. of Radiology, Vol. II, No. 22, Oct., 1929. Dr. Kustner, J. A. M. A., Mar. 15, 1930.

Granuloma Pyogenicum

The clearing up of the condition is reported.

Technique: Alpine—Fourth degree erythema at 10 inches. Surrounding

skin must be protected.

Medical Reference: Dr. Parkhurst, Toledo, Arch. of Dermat. and Syphilol., Mar., 1922.

Hair, Falling

Premature falling of the hair is frequently due to germ infection of the hair follicles. If there is any life left in the hair follicle, continued use of the ultraviolet rays will stimulate hair growth. The ultraviolet kills the germs in the hair follicle and prevents further loss of hair.

Technique: Alpine—Third degree erythema, focusing rays through lamp's

apertures to cover small affected areas. Forty-eight hours for first three treatments, and then twice weekly thereafter. Protect patient's forehead and ears.

Medical Reference: Results of epilating X-Ray overdose, Arch. Dermat. and Syph., Sept., 1922. Richard H. Muller, Med. Record, May 8, 1915. Queries—Hygeia, Mar., 1932.

Hay Fever and Rhinitis

Favorable results have been reported in the treatment of hay fever by radiating the air passages of the nose by means of the solid quartz rod applicator. The sneezing and lacrimation are usually controlled in six to eight treatments.

Technique. Treatments daily unless there is excessive evidence of reaction in any one locality, in which case treatments on that locality should be omitted until reaction dies down.

Favorable results are reported in the treatment of Hay Fever and Rhinitis. In both cases general body radiation should be given with the Alpine Sun Lamp, and more particularly in the case of hay fever, local application well into the antrum by means of a speculum. This may be more conveniently administered, however, by the Kromayer Lamp, and straight quartz rod

applicator.

Medical Reference: Drs. F. J. Novak and A. R. Hollender, in Illinois Med. J., Apr., 1924. A. R. Hollender, M. D., and Maurice H. Cottle, M. D., Med. Herald and Physiotherapist, June, 1925. A. R. Hollender, M. D., Eye, Ear, Nose and Throat Monthly, June, 1924. C. R. Brooke, M. D., Int. Clinics, Vol. 2, Series 34. Drs. Harry Bond Wilmer & Merle Middour Miller, Arch. of Phy. Ther., X-Ray, Radium, Nov., 1935. Dr. A. J. Cemach, Brit. J. of Phy. Med., June, 1931. Dr. Edw. James Deck, Brit. J. Phy. Med., Apr., 1932. Dr. Carl B. Sputh, Arch. of Phy. Ther., X-Ray, Radium, Nov., 1930. Dr. A. J. Cemach, Eye, Ear, Nose and Throat Monthly, June, 1929. Dr. F. L. Wahrer, Arch. of Phy. Ther., X-Ray, Radium, Sept., 1932. Dr. G. J. Warnshius, Arch. of Phy. Ther., X-Ray, Radium, Nov., 1931.

Infantile Paralysis

Excellent results are reported as obtained in improving the general health of patients suffering from infantile paralysis.

Technique: Alpine—First degree erythema. General body radiations.

Medical Reference: Dr. G. Murray Levick, Brit. J. of Phy. Med., Jan., 1932. Dr. John Ruhrah, M. D., Am. Med. Assn. J., May 20, 1933. Dr. Richard Kovacs, Clin. Med. & Surg., Mar., 1932.

Infantile Tetany

It has been conclusively demonstrated that the calcium concentration of the serum is regularly low in cases of active and infantile tetany, and it has been shown that the calcium concentration of the serum of rachitic children can be raised to a normal level by exposing the children to ultraviolet rays.

Technique: Alpine—Second degree erythema, giving general body radiations. Increase subsequent exposures, bearing in mind the increasing tolerance of the patient. Allow reaction to subside before repeating.

Medical Reference: Drs. Horton, Casparis and Benjamin Kramer, from the Department of Pediatrics of the Johns Hopkins University and the Harriet Lane Home, Johns Hopkins Bulletin, July, 1923. Dr. L. A. Hoag, of Boston,

Am. J. of Diseases of Children, Aug., 1923. Dr. Fonteyne, Soc. Delge de Ped., in A. M. A. J., Apr. 26, 1924, p. 1375. E. P. Russell, M. D., Michigan State Med. J., Dec., 1924. Drs. H. and R. M. Bakwin, Med. Times & L. I. Med. J., Feb., 1931. Dr. Henry Laurens, Med. J. and Record, Dec. 18, 1929. Dr. Abraham S. Small, J. of Pediatrics, June, 1933. Drs. Alfred F. Hess, Jos. Gross, Mildred Weinstock and Frieda Berliner, J. of Bio. Chem., Nov., 1932. Dr. Lloyd P. MacHaffie, Canadian Med. Assn. J., Apr., 1932. Dr. Edgar Mayer, The Med. Herald, Apr., 1932. Dr. Henry A. Sincock, Wisconsin Med. J., Dec., 1932. Dr. Edgar Mayer, A. M. A., Jan. 16, 1932. F. Elmer Johnson, J. of Diseases of Children, Nov., 1930. Norman Ward Clein, M. D., Northwest Med., Oct., 1930.

Infections (Bather's Ear; Chronic Middle Ear Suppuration, etc.)

Owing to the powerful bactericidal action of ultraviolet rays, all kinds of infections may be treated with success by ultraviolet rays.

Technique: Alpine—First degree erythema. General body radiations.

Kromayer—Second or third degree erythema locally. Allow reaction to subside and repeat.

Medical Reference: Dr. I. O. Denman, Eye, Ear, Nose and Throat Monthly, Mar., 1923. Bulletin of Johns Hopkins Hospital, Jan., 1923. N. Y. Med. J. & Med. Record, July 4, 1923. Arch. of Int. Med., May, 1917, Vol. XIX, part 1, p. 801. W. E. Howell, Med. Herald and Physiotherapist, June, 1923. I. O. Denman, M. D., Am. Med., June, 1925. J. Zahorsky, Mo. State Med. J., Feb., 1925. A. E. Schiller, M. D., Michigan State Med. J., June, 1922. From the Microbiological Research Institute of the Commissariat of Public Education



KROMAYER LAMP TREATING A CASE OF CHRONIC MIDDLE EAR SUPPURATION

of the R. S. F. S. R. in Moscow, Mar. 17, 1930. Dr. J. E. Rueth, Arch. of Phy. Ther., X-Ray, Radium, Jan., 1933. F. P. Corrigan & W. Boukalik, Surgery, Gynecology & Obstetrics, Sept., 1932. Dr. Edwin L. Libbert, Brit. J. of Phy. Med., Feb., 1933.

Injuries (Traumatic)

(See Bruises.)

Technique: Alpine—Second degree erythema generally. Corrigan and W. Boukalik, Surgery, Gynecology & Obstetrics, Sept., 1932.

Kromayer—Second or third degree erythema locally. Dr. G. J. Warnshuis, Arch. of Phy. Ther., X-Ray, Radium, Nov., 1931. Sir

Medical Reference: Dr. Hugo Bach, Leonard Hill, Brit. J. of Phy. Med., Die Medizinische Welt, 1935. F. P. Sept., 1931.

Intestinal Tuberculosis

(See under Tuberculosis.)

Technique: Alpine—General body radiations.

Keloid and Scars

On account of the heavy thickening of the tissues severe dosage is necessary to produce anything more than a surface reaction.

Technique: Kromayer—Third degree erythema, contact under firm compression, using quartz lens applicator. Allow reaction to clear up and repeat.

It is best to cover the treated area when treating another, so that the treatments will not overlap.

Medical Reference: Dr. Ralph Bernstein, "Ultra-Violet Rays in Modern Dermatology," Achey & Gorrecht, 1918. Dr. W. L. Clark, Therap. Gazette, May 15, 1916.

Keratosis Pilaris

This condition readily responds to local radiations with either the Alpine or Kromayer Lamp. Mild reaction with slight, exfoliation usually is enough to relieve condition.

Technique: Alpine—Second degree erythema according to the stubbornness of the case. Distance 30 inches, decreasing distance at subsequent

treatments.

Kromayer—Second degree erythema, at 8 inches. Allow to clear up and repeat.

Medical Reference: Dr. Michelson, Arch. of Derm. & Syph., May, 1922. Dr. Fred Wise, N. Y. Med. J., Feb. 3, 1917.

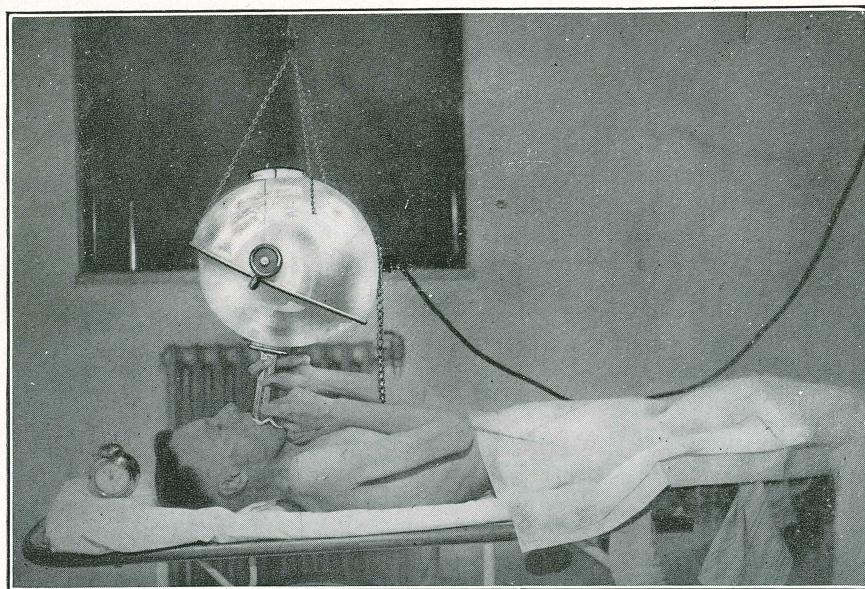
Laryngitis (Acute and Tuberculous, also Pharyngitis)

Marked success has followed the treatment of tuberculous laryngitis as well as the acute forms of this disease. **Technique:** Kromayer—First or second degree erythema, using a laryngeal applicator. Caution should be used not to cause a violent reaction. Treatment every two days if reaction will allow.

Alpine—External first degree erythema local radiations may be given, including the head and chest.

Medical Reference: Dr. Edgar Mayer, Saranac Lake, Am. Rev. of Tub., Dec., 1921. Dr. I. O. Denman, Eye, Ear, Nose and Throat Monthly, Mar., 1923. M. Osterman, Am. J. of Phy.

Laryngitis (Acute and Tuberculous, also Pharyngitis) (Continued)



ALPINE SUN LAMP TREATING CASE OF TUBERCULAR LARYNGITIS.

Ther., Jan., 1925. I. O. Denman, M. D., Eye, Ear, Nose and Throat Monthly, June, 1923. J. H. Bendes, Chicago Med. Soc. Bul., Sept. 2, 1923. Benjamin Goldberg, Arch. of Phy. Ther., X-Ray, Radium, Nov., 1932. Dr. A. J. Cemach, J. of Laryngology & Otology, May, 1933. E. E. Glenn & B. J. McGinnis, J. of Miss. Med. Assn., Jan., 1930.

Editorial, Arch. of Phy. Ther., X-Ray, Radium, Dec., 1930. A. J. Cemach, Eye, Ear, Nose and Throat Monthly, June, 1929. Dr. Katz, J. A. M. A., Sept. 19, 1931. Dr. F. R. G. Heaf, Brit. Med. J., Nov. 25, 1933. Dr. Geo. Wilson, Arch. of Phy. Ther., X-Ray, Radium, Jan., 1934.

Leukoderma (Vitiligo)

The areas that respond with complete or nearly complete, pigmentation as a result of treatment by ultraviolet light are those situated on the face. Achromic areas on covered surfaces of the body respond with only a partial degree of pigmentation, the degree of pigmentation in an area being approximately in inverse ratio with the degree to which it had been habitually kept protected from the sun's rays.

Technique: Kromayer Lamp—With a lens applicator under compression, third degree erythema. Normal skin should be protected.

Medical Reference: Dr. N. Toomey, Instructor in Derm., St. Louis University of Med., J. Missouri State Med. Assn., Dec., 1922. Dr. Hugo Bach, "Ultra-Violet Light," Paul B. Hoeber, 1916. Dr. Austin Furniss, The Med. Press and Circular, Nov. 15, 1933.

Lichen (Planus and Tropicus)

Lichen Planus responds to moderate doses of ultraviolet light. Most authors recommend radiation sufficient to produce a mild blistering. The prompt control of the accompanying pruritus is an advantage.

Technique: Alpine—First or second degree erythema. General body radiations, 30 inches.

Kromayer—Second degree erythema, 2½ inches.

Medical Reference: Dr. W. J. Mac-

Donald, Boston, Boston Med. & Surg. J., p. 809, May 24, 1923. Dr. Ralph Bernstein, "Ultra-Violet Rays in Modern Dermatology," Achey & Gorrecht, 1918. E. D. Chipman, M. D., J. A. M. A., Sept. 27, 1924. C. S. Thompson, Am. J. Electro. & Radiology, June, 1925. Austin Furniss, Med. World, Sept. 28, 1934. Dr. Charles J. White, Brit. J. of Phy. Med., Jan., 1934. Juster and Tchirpout, Bull. Soc. franc. de dermat. et syph. 35, 15, 1928. E. Swirsky, Arch. of Phy. Ther., X-Ray, Radium, Feb., 1934.

Lumbago

Favorable results have been reported in this condition whether associated with sciatic neuritis or not. Pain is gradually lessened by such treatment.

Technique: Alpine—Second degree erythema. General body radiation, particularly over lumbar region.

Kromayer—Second degree erythema locally.

Medical Reference: Dr. Donald McCaskey, N. Y. Med. J., Dec. 27, 1919. Dr. Eneas J. Macintyre, Brit. J. of Phy. Med., June, 1933. Dr. A. R. Hollender, Med. J. and Record, Feb. 15, 1933. Editorial, Med. Herald, Feb., 1932.

Lupus Vulgaris (Also Scrofuloderma)

Specific results are reported by many authorities.

Technique: Kromayer Lamp—In contact under compression, third to fourth degree erythema. Repeat after reaction subsides in two or three weeks.

Alpine Sun Lamp—A general body radiation with the Alpine Sun Lamp, first or second degree erythema.

Medical Reference: Dr. E. L. Oliver, J. A. M. A., Aug. 19, 1922. Dr. A. Schuyler Clark, J. of Cut. Diseases, June, 1914. Dr. E. W. Hirsch, Am. J. of Clin. Med., June, 1922. Scrofuloderma. Dr. W. J. MacDonald, Boston Med. and Surg. J., May 24, 1923. H. L. Classen, M. D., Cincinnati J. of Med., May, 1925. E. D. Downey and F. A. Forney, Colo. Med., Jan., 1925. F. Wise, M. D.,

Arch. of Dermat., Nov., 1924. G. B. Eusterman, Ohio State Med. J., Nov., 1924. M. Scholtz, M. D., Calif. & Western Med., June, 1922. Dr. Austin Furniss, Med. World, Sept. 29, 1933. Dr. J. E. Rueth, Arch. of Phy. Ther., X-Ray, Radium, Jan., 1933. S. Lomholt, J. A. M. A., Nov. 26, 1932. Dr. Geo. M. Lewis, Arch. of Phy. Ther., X-Ray, Radium, Aug., 1932. Dr. Justina Wilson, Proc. Royal Soc. Med., Jan., 1931. Dr. Geo. M. MacKee, Am. Med. Assn. J., Aug. 30, 1932. Dr. Edgar Mayer, Am. M. Assn. J., Jan. 16, 1932. Dalsgaard, J. A. M. A., Nov. 25, 1933. Dr. Austin Furniss, Med. World, Sept. 20, 1935. Dr. R. Volk, Brit. J. of Phy. Med., June, 1932. Dr. G. Jessel, Arch. of Phy. Ther., X-Ray, Radium, June, 1932. Dr. H. Harris Perlman, Brit. J.

Lupus Vulgaris (Also Scrofuloderma)—(Continued)

of Phy. Med., Feb., 1932. W. Knowsley Sibley, Med. Press and Circular, Nov. 4, 1925. R. Volk, Brit. J. of Actino. & Phys., Oct., 1930, Am. Review of Tuberculosis, Mar., 1932. W. J. O'Donovan, Am. Review of Tuberculosis, Oct., 1931. Dr. J. O. Murray, Brit. J. of Actinotherapy & Physiotherapy, Oct., 1930. Dr. A. J. Cemach, Eye, Ear, Nose & Throat Monthly, June, 1929.

Middle Ear Suppuration, Chronic

(See Infections.)

Technique: Alpine—First degree erythema. General body radiations. Allow reaction to subside and repeat.
Kromayer—Second degree erythema, locally with suitable applicator. **Medical Reference:** Dr. Howard P. Bellows, Am. J. of Phy. Ther., Dec., 1930.

Myositis

Favorable reports have been made in the treatment of this condition.

Technique: Alpine Sun Lamp—Third degree erythema.

Medical Reference: Dr. Edgar Mayer,

Am. Rev. of Tub., Apr., 1921. Dr. J. C. Elsom, Arch. of Phy. Ther., X-Ray, Radium, Aug., 1934. Dr. Austin Furniss, Sept. 28, 1934. Dr. H. Harris Perlman, Brit. J. of Phy. Med., Feb., 1932.

Naevus, Vascular (Port Wine Mark)

This is preeminently the domain of the Kromayer Lamp, because compression is needed to produce results. Many authorities report success in treating naevi.

Technique: Kromayer Lamp—Fourth degree erythema in contact under compression. Second treatment, if needed, in two or three weeks.

Medical Reference: Dr. A. Schuyler Clark, J. of Cut., June, 1914. Dr. Fred Wise, Arch. of Derm. & Syph., Mar., 1922. Dr. W. L. Clark, Phila. Therapeutic Gazette, May 15, 1916. Dr. E. L. Oliver, Boston Med. & Surg. J., p.

155, Aug. 5, 1920; also J. A. M. A., Aug. 19, 1922. Dr. Fred Wise, N. Y. Derm. Soc., Nov. 22, 1922. Dr. E. W. Hirsch, Am. J. of Clin. Med., June, 1922. Dr. W. T. Lee, J. Am. Inst. of Homo., Apr., 1922. Ervin Butler and Turnacliiff, M. D., Soc. Trans., Arch. of Dermat., Jan., 1925. Dr. Herbert E. Coe, J. of Pediatrics, Aug., 1933. Prof. Ernst Kromayer, Brit. J. of Phy. Med., Feb., 1933. Prof. Ernst Kromayer, J. A. M. A., Oct. 1, 1932. Dr. Geo. M. Lewis, Arch. of Phy. Ther., X-Ray, Radium, Aug., 1932. Dr. Willis S. Peck, J. of Mich. State Med. Soc., Nov., 1931.

Neuralgia and Arthralgia

A large percentage of cases reported by Brustein (Leningrad) show either complete recovery or considerable improvement.

Technique: Alpine Sun Lamp—Second degree erythema, general body radiation.

Neuralgia and Arthralgia—(Continued)

Kromayer—On local areas second or third degree erythema.

Medical Reference: Dr. Hugo Bach, "Ultra-Violet Light," Paul B. Hoeber, 1916. Dr. Kobak and Dr. Frankel, A.

M. A., Jan. 28, 1933. Dr. Farneti, A. M. A., Feb. 18, 1933. Drs. Disraeli Kobak and Esther Frankel, Arch. of Phy. Ther., X-Ray, Radium, Oct., 1932. Dr. S. Lepsky, Brit. J. of Phy. Med., Feb., 1933.

Neuritis

Encouraging results are reported in this disease. One authority reported five out of six successful; no other form of treatment was employed.

Technique: Alpine—Second to third degree erythema over local area. General tonic radiations, 30 inches.

Kromayer—Second degree erythema, locally.

Medical Reference: Dr. A. H. Bingham, read at Academy Path. Soc., N. Y. City, Dec. 27, 1918. Dr. Jos. Echtman, Med. Times & L. I. Med. J., June, 1935. Dr. Eneas J. Macintyre, Brit. J. of Phy. Med., June, 1933. Dr. G. J. Warnshius, Arch. of Phy. Ther., X-Ray, Radium, Nov., 1931. Dr. S. Lepsky, Brit. J. of Phy. Med., Feb., 1933.

Neurodermatitis

Technique: Alpine—General tonic giving a good second degree erythema, 30 inches.

Kromayer—Second degree erythema. Treat daily till cleared up.

Medical Reference: S. Lomholt, Med. Times & L. I. Med. J., Dec., 1931. George M. MacKee, M. D., A. M. A., Apr. 30, 1932. Geo. M. Lewis, Arch. of Phy. Ther., X-Ray, Radium, Aug., 1932.

Otitis Media

Technique: Alpine—Second degree erythema applied by using the short quartz rod with Mayer Aural applicator inserted in the ear canal as far as possible up to the drum.

Alpine—General body radiations, tonic dose. Allow to clear up and repeat.

Medical Reference: Dr. I. O. Denman, Ear, Nose and Throat Monthly, Mar., 1923, and Jan., 1926. Drs. H. Gershenberger and C. T. J. Dodge, Am. J. of Dis. of Children, Oct., 1922, p. 320. J. Zahorsky, Missouri State Med. J., Feb., 1925. A. R. Hollender, M. D., & Maurice H. Cottle, M. D., Am. J. of Phys. Therapy, Apr., 1925. A. R. Hollender, M. D., & Maurice H. Cottle, M. D., Eye, Ear, Nose & Throat Monthly, Feb., 1925. W. S. Thacker Neville, Brit. J. of Phy. Med., Feb., 1933. Matthew S. Ersner & Syd-



METHOD USED IN TREATING OTITIS MEDIA

ney Shapin, Med. J. & Record, Mar. 16, 1932. Drs. Edw. S. Babcock & J. R. Jones, California & Western Med., Aug., 1929.

Parakeratosis Variegata

(See Keratosis Pilaris.)

Technique: Alpine—Second degree erythema, 30 inches.

Kromayer—Second degree erythema, 8 inches. Allow to clear up and repeat.

Medical Reference: Dr. Michaelson, Soc. Trans., Arch. of Dermat., F. 432. Dr. Michelson, Arch. of Dermatology and Syphilology, May, 1922.

Periarthritis

In this, as in other bone and joint infections, an early beneficial effect has been noted.

Technique: Alpine—Second degree erythema, general body radiations, or second to third degree erythema locally.

Kromayer—Second to third degree

erythema locally.

Medical Reference: Dr. W. C. Campbell, Am. J. of Ortho. Surg., 1916. Dr. A. E. Schiller, Det. J. Mich. Sta. Med. Soc., June, 1922. Dr. Hugo Bach, "Ultra-Violet Light," Paul B. Hoeber, 1916. Drs. James A. Dickson & Edw. H. Crosby, J. A. M. A., Dec. 31, 1932.

Periosteitis

Favorable reports are had in conditions of periosteitis with prompt relief of pain. Drainage should be established by opening the abscess where necessary.

Technique: Alpine—General body radiation. Second degree erythema, treat local area.

Kromayer—Third degree erythema, locally.

Medical Reference: Lt. L. B. Lippman (M. C. D. S.), U. S. Navy, Am. J. of Elec. & Rad., Oct., 1921. Dr. J. E. Elsom, Arch. of Phy. Ther., X-Ray, Radium, Aug., 1934.

Peritonitis (Tuberculous)

(See Tuberculosis.)

Technique: Alpine—Second degree erythema, locally if possible, general tonic radiations.

Kromayer—Second degree erythema, locally.

Medical Reference: J. C. Tassart, Brit. J. of Phy. Med., Apr., 1932. Garfield C. Burrows, Med. J. & Record, Sept., 1928. Dr. Ralph McGill, J. of the Oklahoma State Med. Assn., Oct., 1926.

Pharyngitis

(See Laryngitis.)

Technique: Alpine—External local first degree erythema, include head and chest.

Kromayer—First or second degree erythema, using a pharyngeal applica-

tor. Do not cause a violent reaction.

Medical Reference: Dr. J. D. Hindley-Smith, Brit. J. of Phy. Med., Mar., 1935. Dr. F. L. Wahrer, Arch. of Phy. Ther., X-Ray, Radium, Sept., 1932.

Pink Disease

(See Acrodynia.)

Pityriasis Rosea

Responds readily to the action of ultraviolet rays. After one treatment will generally disappear on the subsequent peeling of the skin.

Technique: Alpine—Second to third degree erythema, 30 inches. Decrease distance in subsequent treatments.

Kromayer—Third degree erythema, 2½ inches. Allow reaction to subside and repeat.

Medical Reference: J. C. Michael, M. D., Southern Med. J., July, 1925, Vol. XVIII, No. 7, p. 519. Dr. W. J. MacDonald, Boston, Med. & Surg. J., May 24, 1923. Dr. E. D. Chipman, San

Fran., J. A. M. A., Sept. 27, 1924, p. 971. G. B. Eusterman, M. D., Ohio State Med. J., Nov., 1924. Dr. Howard Fox, N. Y. State J. of Med., Apr. 1, 1934. Dr. Austin Furniss, Med. World, Sept. 28, 1934. Dr. Howard J. Parkhurst, J. Michigan State Med. Soc., Dec., 1932. Dr. Herman Goodman & Dr. Herbert S. Abel, Am. J. of Phy. Ther., May, 1932. Dr. Geo. M. Lewis, Arch. of Phy. Ther., X-Ray, Radium, Aug., 1932. Dr. H. Harris Perlman, Brit. J. of Phy. Med., Feb., 1932. Dr. Geo. M. MacKee, J. A. M. A., Apr., 1932. Dr. Edgar Mayer, J. A. M. A., Jan. 16, 1932.

Pneumonia

Clinical studies have shown that the use of ultraviolet radiation is a logical means of prevention of pneumonia where the symptoms indicate the approach of such conditions.

Technique: Alpine—First to second degree erythema. General body radiations.

Kromayer—Second degree erythema, locally.

Medical Reference: Dr. A. E. Schiller, J. Mich. Sta. Med. Soc., June, 1922. Dr. Donald McCaskey, N. Y. Med. J., Dec. 27, 1919. Dr. G. J. Warnshuis, Arch. of Phy. Ther., X-Ray, Radium, Nov., 1931. Dr. H. Harris Perlman, Brit. J. of Phy. Med., Feb., 1932.

Port Wine Marks

(See Naevus.)

Technique: Kromayer—Fourth degree erythema in contact under compression.

Medical Reference: E. D. Chipman, J.

A. M. A., Sept. 27, 1924. G. B. Eusterman, Ohio State Med. J., Nov., 1924. Dr. Willis S. Peck, J. Mich. State Med. Soc., Nov., 1931.

Pruritus

Kromayer or Alpine Lamp for the treatment of extensive areas, e.g., Pruritus Senilis, the Alpine Sun Lamp should be used.

Technique: Alpine—Second degree erythema or a third degree if condition resists.

Kromayer—Second to third degree

Pruritus—(Continued)

erythema, 2½ inches. Allow reaction to subside and repeat.

Medical Reference: Dr. E. W. Hirsch, Am. J. of Clin. Med., June, 1922. Dr. E. L. Oliver, Boston Med. & Surg. J., p. 155, Aug. 5, 1920. Dr. H. F. Pitcher,

Am. J. of Elec. & Rad., Feb., 1922. Dr. C. A. Simpson, South Med. J., Oct., 1918. Med. Times, Mar., 1923, p. 79. L. J. Carter, Canad. Med. J., Feb., 1925. M. Scholtz, Calif. & Western Med., June, 1922.

Psoriasis (Para-Psoriasis)

These cases respond readily to treatment with the Kromayer and Alpine Sun Lamp, and the individual lesions quickly disappear. Strenuous radiations are necessary with marked desquamation, and before exposure scales should be removed as far as possible to allow the rays to reach the surface of the skin.

Technique: Alpine—Third degree erythema, and even fourth degree on resistant patches.

Kromayer—Third degree erythema, 2½ inches. Allow to clear up and repeat.

Medical Reference: Dr. C. S. Thomson, Chief of Clinic, U. S. Veterans' Bureau, Newark, Am. J. of Elec. & Rad., July, 1923. Dr. E. L. Oliver, Boston Med. & Surg. J., Aug. 5, 1920, also in J. A. M. A., Aug. 19, 1922. Dr. C. A. Simpson, South. Med. J., Oct. 18, 1918. Dr. H. E. Alderson, Clinical Prof. of Med. (Skin Diseases), Stanford Univ. Med. School, San Francisco, Arch. Derm. & Syph., July, 1923. I. Glassman, Am. Phy., Apr., 1925. G. W. Swift, M. D., Northwest Med., May, 1925. W. H. Goeckerman, M. D., Northwest Med., May, 1925. T. C. McKenzie, M. B., Ch. B., and I. C. Suttan, Am. J. of Phy. Ther., June, 1925. J. Zahorsky, Mo. State Med. J., Feb., 1925. L. J. Carter, Canad. Med. J., Feb., 1925. C. D. Chipman, J. A. M. A., Sept. 27, 1924. E. W. Hirsch, Am. J.

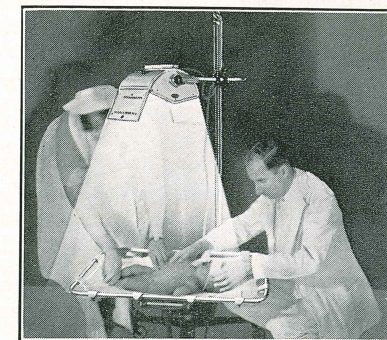
of Clin. Med., June, 1922. Dr. Swartz, Soc. Trans. Arch. of Dermat. (F. 409). Dr. Bernard Fantus, Am. Med. Assn. J., July, 1936. Dr. Joseph Echtman, Arch. of Phy. Ther., X-Ray, Radium, Nov., 1934. Dr. Schliack, Brit. J. of Phy. Med., Feb., 1936. Austin Furniss, Med. Press and Circular, Aug. 28, 1935. Dr. Howard Fox, N. Y. State J. of Med., Apr. 1, 1934. Queries & Minor Notes, Am. Med. Assn. J., Mar. 24, 1934. C. M. Henry, Can. Med. Assn. J., Dec., 1931. Dr. Eneas J. Macintyre, Brit. J. of Phy. Med., June, 1933. W. H. Goeckerman, J. A. M. A., July 22, 1933. Dr. Norman E. Titus, Arch. of Phy. Ther., X-Ray, Radium, Aug., 1931. Dr. Wm. H. Goeckerman, Brit. J. of Phy. Med., Mar., 1933. J. E. Rueth, Arch. of Phy. Ther., X-Ray, Radium, Jan., 1933. Queries & Minor Notes, J. A. M. A., Dec. 17, 1932. Dr. Donald J. Wilson, Arch. of Phy. Ther., X-Ray, Radium. Dr. Wm. H. Goeckerman, Arch. of Dermatology & Syphilology, Sept., 1931. Dr. Geo. M. Lewis, Arch. of Phy. Ther., X-Ray, Radium, Aug., 1932. Dr. S. J. Zakon, Illinois Med. J., May, 1932. Dr. W. Knowsley Sibley, Med. Press and Circular, Nov. 4, 1925. Dr. H. Harris Perlman, Brit. J. of Phy. Med., Feb., 1932. Dr. Geo. M. MacKee, J. A. M. A., Apr. 30, 1932. A. M. A.—Editorial, A. M. A., Apr. 16, 1932. Dr. Edgar Mayer, A. M. A., Jan. 16, 1932. Questions and Answers, Arch. of Phy. Ther., Radium, Sept., 1931.

Rickets

Many authorities testify to the value of ultraviolet treatment in the prevention and cure of rickets. Ultraviolet rays increase the calcium and phosphorus content of the blood as well as increase general body metabolism.

Technique: Alpine Sun Lamp—First or second degree erythema. General body radiation. Gradually increasing the dosage as the reaction subsides and tolerance is established.

Medical Reference: Dr. Lynne A. Hoag, Am. J. of Child. Dis., p. 194, Aug., 1923. Dr. A. F. Hess and L. J. Unger, Am. J. of Dis. of Children, Aug., 1921. Drs. McCullon, Shipley, Simmonds and Becker, J. of Biological Chem., Aug., 1922. Dr. A. F. Hess, Atlantic Med. J., May, 1924, p. 467. Drs. W. L. Orr, E. E. Holt, Jr., L. Wilkins and F. H. Boone, in Am. J. Dis. Children, Oct., 1923. Science Supplement, May 22, 1925. T. Schultz and M. Morris, Am. J. of Child. Dis., Oct., 1925. I. Jundell and E. E. Block, F. Faber, Am. J. of Child. Dis., Oct., 1925. G. M. Lyon, B. S., M. D., W. Va. Med. J., June, 1925. L. R. DeBuys, Ill. Med. J., June, 1925. L. Fischer, J. of Met. Research, Nov.-Dec., 1923. S. G. Wilson, M. Seldowitz, M. D., J. of Dis. of Child., May, 1925. E. P. Lehman, M. D., Mt. J. of Ortho., June, 1925. L. Tixler and Feldzer, M. D., Am. J. of Phy. Ther., June, 1925. A. F. Hess, Canad. Med. Assn. J., May, 1925. M. Osterman, Ars. Medici, Vienna, ix, Spitalgasse. C. R. Moulton, M. D., Hospital Buyer, June, 1925. J. A. Myers, M. D., Colo. Med., June, 1925. A. F. Hess, J. A. M. A., June 20, 1925. H. S. Mitchell and F. Johnson, Am. J. of Physiology, Mar., 1925. E. L. Milosavich, M. D., Int. J. of Ortho., Feb., 1925. A. F. Hess, J. A. M. A., Apr. 4, 1925. J. Zahorsky, M. D., Mo. State Med. J., Feb., 1925. R. Forbes and G. Green, Colo. Med., Feb., 1925. K. Huldshinsky, 2nd edition, 1925. D.



INFANT BEING GIVEN AN ALPINE SUN TREATMENT FOR THE PREVENTION OF RICKETS.

M. Dayton, Northwest Med., Nov., 1924. A. F. Hess, M. D., and Mildred Weinstock, J. A. M. A., Nov. 15, 1924. E. T. Wyman and C. A. Wymuller, J. A. M. A., Nov. 8, 1924. L. E. Holt, J. A. M. A., May 20, 1922. E. A. Park, Dental Cosmos, Feb., 1925. Dr. K. Huldshinsky, No. 26, Deutsche Medizinische Wochenschrift (26 IV, 1919). No. 49, Allgemeine Medizinische Central-Zeitung (6 XII, 1919). Vol. XI of Strahlentherapie (1919). Vol. XXVI, No. 5, Zeitschrift für Kinderheilkunde. Alfred Hess: Atlantic Med. J., May, 1924. Drs. Martha M. Eliot, E. M. Nelson, Susan P. Souther and M. K. Cary, A. M. A., Sept. 24, 1932. Dr. Edgar Mayer, Med. Herald, Apr., 1932. Dr. Frederick F. Tisdall and Allan Brown, M. B., A. M. A., Mar. 22, 1930. Dr. Geo. H. Maughan, Am. J. of Phy. Ther., May, 1930. Dr. F. F. Tisdall, T. G. Drake and Alan Brown, Can. Med. Assn. J., May, 1935. Dr. Benj. Kramer and Isaac F. Gittleman, New England J. of Med., Nov. 2, 1933. Dr. Martha R. Jones, Dental Cosmos, July, 1935. Alfred F. Hess and J. M. Lewis, J. A. M. A., July 15, 1933. Edwin T. Wyman, M. D., and Allan M. Butler, Am. J. of Diseases of Children, June, 1932. Dr. K. Huldshinsky, Mono-

Rickets—(Continued)

graph, 1924. Dr. J. R. W. Hay, Lancet, June 30, 1934. W. Catel, Am. J. of Diseases of Children, May, 1933. Henry Laurens, Med. J. and Record, Dec. 18, 1929. Dr. H. Stanley Banks, Brit. J. of Actinotherapy, Mar., 1928. Drs. J. Victor Greenbaum and Theo. K. Selkirk, J. of Pediatrics, June, 1933. Drs. John W. Gowen, J. M. Murray, M. E. Gooch, Forrest B. Ames, Science, Jan. 22, 1926. Dr. Sir Leonard Hill, Brit. J. of Phy. Med., Sept., 1931. Dr. Alfred F. Hess, Jos. Gross, Mildred Weinstock and Frieda S. Berliner, J. of Bio. Chem., Nov., 1932. Alfred F. Hess and Lester J. Under, Am. J. of Diseases of Children, Aug., 1921. Dr. Wm. R. Wilson, A. M. A., June 2, 1934. Austin Furniss, Med. World, Sept. 28, 1934. Dr. J. M. Lewis, J. of Pediatrics, Mar., 1935. Dr. Martha M. Eliot, Child Welfare, Jan., 1933. F. Thos. Mitchell and Stephen W. Coley, A. M. A., Feb., 1933. Dr. Harold M. F. Behneman, Arch. of Phy. Ther., X-Ray, Radium, Feb., 1933. Dr. Ralph A. Reynolds, Internatl. J. of Orthodontia, Feb., 1933. Drs. Alfred F. Hess and John C. Torrey, Soc. Exper. Biology, 1932. Dr. Louis J. Auerbacher, Med. J. & Record, Nov. 2, 1932. Dr. John Caffey, N. Y. Academy of

Med., Section of Pediatrics, Aug., 1932. Dr. Arthur Knudson, Am. J. of Dis. of Children, Sept., 1932. Dr. Arthur Knudson, Am. J. of Dis. of Children, Sept., 1932. Hon. Lord Dawson of Penn, Can. Med. Assn. J., Sept., 1932. J. H. G. Carstens, Brit. J. of Phy. Med., Jan., 1932. Dr. H. Harris Perlman, Brit. J. of Phy. Med., Feb., 1932. Dr. Edwards A. Park, Can. Med. Assn., 1932, 26, 3. Dr. Robert J. Reade, Med. J. and Record, Dec. 16, 1931. Prof. Rene Fabre, Clin. Med. and Surg., Mar., 1932. Dr. Edgar Mayer, A. M. A., Jan. 16, 1932. Dr. Victor E. Levine, Arch. of Phy. Ther., X-Ray, Radium, July, 1931. Editorial, A. M. A., Aug. 8, 1931. Dr. G. H. Maughan and J. A. Dye, Am. J. of Diseases of Children, Sept., 1930. Dr. H. Vollmer, J. A. M. A., Mar. 7, 1931. Drs. Hermann B. Stein and Robert C. Lewis, Am. J. of Dis. of Children, Jan., 1931. Dr. O. Andresen, Arch. f. Kinderh 90:65 (Mar. 28), 1930. Dr. John W. M. Bunker and Robt. S. Harris, Am. J. of Public Health, Dec., 1930. G. H. Maughan and J. A. Dye, Am. J. of Phy. Ther., Dec., 1930. Dr. Paul Luttinger, Med. Review of Reviews, Aug., 1929. Drs. Mouriquand, Leulier and Schoen, Am. J. of Dis. of Children, June, 1930.

Rosacea

Depending on the condition of the lesions, one of the two methods, distance or compression, radiation is indicated. Dermatologists consider three stages of Rosacea: the hyperaemic, the telangiectic and the hypertrophic. Rosacea of the nose, when associated with telangiectasis, will not succumb to surface radiations alone, likewise the hypertrophic type. The hyperaemic type responds to mild radiations with the lamp at about two or three inches distance, while the hypertrophic and telangiectic conditions demand

treatment using contact with firm compression.

Technique: Kromayer—Third degree erythema, 2½ inches.

Alpine—Third degree erythema.

HYPERTROPHIC AND TELANGIECTIC TYPES

Kromayer—Third degree erythema, immediate contact with firm pressure with clear quartz window and suitable quartz lens.

Allow to clear up and repeat.

Medical Reference: Dr. W. L. Clark,

Rosacea—(Continued)

Phil., Therapeutic Gazette, May 15, 1916. G. B. Eusterman, M. D., Ohio State Med. J., Nov., 1924. F. Wise, N. Y. State Med. J., Feb. 3, 1917. Dr. R. O. Stein, Die Aertzliche Praxix, 1928.

Scabies

Immediate relief from itching is reported and permanent relief after a series of treatments.

Technique: Alpine Sun Lamp—Second degree erythema.

Medical Reference: Dr. F. J. Kern, Ohio St. Med. J., Apr., 1922. L. J. Carter, M. D., Can. Med. Assn. J., Feb., 1925. Dr. Charles E. Cook, Jr., J. of the Maine Med. Assn., Sept., 1926.

Scars

(See Keloid.)

Technique: Kromayer—Third degree erythema. Contact with compression, with suitable applicator.

Sciatica

It is reported that cases treated with the Alpine Sun Lamp have experienced relief from pain in from twelve to twenty-four hours; and complete recovery is reported from five to twenty treatments. The whole region involved should be exposed to each treatment.

Technique: Alpine—Second to third degree erythema, with first degree erythema, general body radiation.

Kromayer—Second degree erythema locally.

Medical Reference: Dr. A. H. Bing-

ham, N. Y., read at the Academy Path. Soci., N. Y. City, Dec. 27, 1918. Dr. Hugo Bach, "Ultra-Violet Light," Paul B. Hoeber, 1916. Dr. F. J. Kern, Ohio Sta. Med. J., Apr., 1922. T. Clyde McKenzie, M. B., Ch. B., and I. C. Suttan, Am. J. of Phy. Ther., June, 1925. Norman E. Titus, Med. Record, Mar. 18, 1936. A. R. Hollender, Med. J. and Record, Feb. 15, 1933. S. Lepsky, Brit. J. of Phy. Med., July, 1932. Dr. J. P. Martin, Lancet, June 12, 1926. T. Clyde McKenzie, Med. J. & Record, Nov. 18, 1925.

Scrofuloderma

(See Lupus Vulgaris.)

Technique: Kromayer—Third to fourth degree erythema in contact under compression.

Alpine—General body radiations, tonic dose. Allow reaction to subside and repeat.

Medical Reference: Dr. Austin Furniss, Med. World, Sept. 20, 1935. Dr. Geo. M. Lewis, Arch. of Phy. Ther., X-Ray, Radium, Aug., 1932. Dr. Geo. M. MacKee, Am. Med. Assn. J., Aug. 30, 1932. Dr. Edgar Mayer, Am. Med. Assn. J., Jan. 16, 1932.

Seborrhea

(Also Seborrhoeic Dermatitis.)

Favorable reports have been received on the treatment of this condition.

Technique: Alpine—Third degree erythema preferred. A second degree may do.

Kromayer—Third to fourth degree erythema on small areas.

Medical Reference: Dr. C. A. Simpson,

South. Med. J., Oct., 1918. Dr. W. J. MacDonald, Boston Med. & Surg. J., May 24, 1923, p. 809. G. B. Eusterman, M. D., Ohio State Med. J., Nov., 1924. Dr. Moses Scholtz, Urologic and Cutaneous Review, June, 1926. Dr. Edgar Mayer, Arch. of Phy. Ther., X-Ray, Radium, June, 1932. Dr. Edwin P. Zeisler, Arch. of Phy. Ther., X-Ray, Radium, Mar., 1927.

Sinus Infections

The majority of patients, some of whom have been treated in various ways for a period of years, have testified that they derived more benefit from this procedure than anything they have used before. These cases seem to be permanently benefited.

Pus and mucous discharge in the sinus cavity should be all removed before treatment, and the rays applied by means of the short quartz rod introduced through the nose so as to project into the cavity.

Technique: Kromayer—Second degree erythema applied with a short quartz nasal rod or special sinus applicator, giving general exposures to surrounding skin. Treatments daily, increasing the intervals as the discharge is controlled.

Alpine—Second degree erythema externally.

Medical Reference: Lt. L. B. Lippman (M. C. D. S.), Am. J. of Elec. and Rad., Oct., 1921. Norman M. Paterson, Eye, Ear, Nose and Throat Monthly, Oct., 1924. Dr. Abram H. Persky, Arch. of Pediatrics, Sept., 1934. Dr. A. R. Hollender, Med. J. and Record, Feb., 1933. Dr. Louis Feldman, Arch. of Phy. Ther., X-Ray, Radium, Feb., 1932. Dr. R. Kovacs, Clin. Med. and Surg., Jan., 1932. Dr. Louis Feldman, Am. J. of Dis. of Children, Sept., 1931. Dr. Carl B. Sputh, Ophthalmology and Otolaryngology, Apr., 1930. T. Howard Plank, Med. Herald, Aug., 1928. Dr. Frank L. Follweiler, Arch. of Phy. Ther., X-Ray, Radium, Apr., 1934. Dr. Robt. G. Reaves, Arch. of Phy. Ther., Nov., 1929.

Spasmophilia

The prognosis of spasmophilia in infants is serious in many cases; the preferred therapy which has a permanent effect is the ultraviolet irradiation introduced by Huldshinsky in rickets and tetany, which Sachs used successfully in spasmophilia.

Technique: Alpine Sun Lamp—First degree erythema, general body radiations.

Medical Reference: Dr. Armin Flesch Orvosi hetil., Budapest, Sept. 23, 1923. Dr. P. Rohmer, Bull. Soc. de Pudiatrie de Paris, May, June, July, 1923. H. Casparis and B. Kramer, M. D., Am. J. of Phy. Ther., Jan., 1925. G. W. Schultze, M. Morris, J. Nourse and D. N. Smith, Am. J. of Child. Dis., Oct., 1925. L. Tixler and Feldzer, Am. J. of

Spasmophilia—(Continued)

Phy. Ther., June, 1925. Dr. Geo. J. Ott, Henry J. Gerstenberger and J. I. Hartman, J. A. M. A., Feb. 2, 1929. Phy. Therapeutics, Sept., 1929. Dr.

Surgical Cases (Post-Operative)

(See also Anemia, Hemorrhagic and Wounds)

Technique: Alpine—General body tonic radiations, giving a local second degree erythema.

Kromayer—Second degree erythema locally.

Medical Reference: Arnold S. Jackson, M. D., Arch. of P. T., June, 1935. Dr. Wm. Bierman, Med. Times and L. I. Med. J., Dec., 1932. F. P. Corrigan and W. Boukalik, Surgery, Gynecology & Obs., Sept., 1932. Dr. H. C. Miller,

Arch. of Phy. Ther., X-Ray, Radium, Feb., 1932. O. Bernard, Brit. J. of Phy. Med., Apr., 1932. Dr. A. L. Parsons, Dental Cosmos, June, 1934. Dr. Austin Ferniss, Brit. J. of Phy. Med., Nov., 1933. Dr. G. K. Abbott, Clin. Med. and Surg., Sept., 1929. Dr. Leo Winter, Dental Cosmos, Mar., 1933. Dr. Leo Winter, Inter. J. Orthodontia, May, 1932. Dr. Allen T. Newman, Arch. of Phy. Ther., X-Ray, Radium, Nov., 1932.

Sycosis Vulgaris

This condition readily yields to treatment by the Kromayer Lamp or Alpine Sun locally.

Technique: Kromayer—Third to fourth degree erythema in contact, or at 1 inch as case may require. Hair should be clipped to allow rays to reach area treated.

Alpine—Third degree erythema.

Medical Reference: Dr. Fred Wise, N.

Y. Med. J., Feb., 1917. Dr. Moses Scholtz, Cal. Sta. J. of Med., June, 1922. T. C. McKenzie, M. B., Ch. B., I. C. Suttan, Am. J. of Phy. Ther., June, 1925. M. Scholtz, Calif. and Western Med., June, 1922. H. Fox, Arch. of Dermat. (File 470). Dr. Austin Furniss, Med. Press & Circular, Aug. 1, 1934. Dr. C. M. Henry, Can. Med. Assn. J., Dec., 1931. Dr. Geo. M. MacKee, J. A. M. A., Apr. 30, 1932.

Synovitis

Cases of synovitis are reported as beneficially treated by ultraviolet therapy.

Technique: Alpine—First to second degree erythema applied locally.

Kromayer—Second degree erythema at one inch distance. In severe cases

the treatment must be persisted in. Allow to clear up and repeat.

Medical Reference: Dr. A. H. Bingham, read at the Academy Path. Soci., N. Y., Dec. 27, 1918. Norman E. Titus, Arch. of Phy. Ther., X-Ray, Radium, May, 1933.

Telangiectasis

Telangiectasis, whether of natural occurrence or produced by X-Ray

burns, responds to compression treatment with the Kromayer Lamp.

Telangiectasis—(Continued)

Technique: Kromayer—Fourth degree erythema in contact, using compression.

Medical Reference: Dr. W. L. Clark, *Therapeutic Gazette*, May 15, 1916. Dr. G. M. MacKee, "X-Rays and Radium in the Treatment of Diseases of the Skin," Lea & Febiger, 1921, says: "X-Rays and radium gives unwarranted reactions in this treatment, and

that much better results can be had with ultraviolet," p. 495. The normal skin should be protected. Dr. H. H. Hazen, Prof. of Germ., Georgetown Univ., *Am. J. of Roent.*, Feb., 1922. Dr. Albert Eidinow, *Brit. Med. J.*, Oct. 26, 1935. Dr. Geo. M. MacKee, *Am. Med. Assn. J.*, Apr. 30, 1932. Dr. Geo. M. Lewis, *Med. J. & Record*, Sept. 2, 1931.

Tetany (Infantile)

(See Infantile Tetany.)

Technique: Alpine—First to second degree erythema. General body radiation.

Kromayer—Second to third degree erythema locally.

Medical Reference: A. F. Hess, M. D., *J. A. M. A.*, June 20, 1925. F. W.

Schultze, M. Morris, J. D. Nourse and D. N. Smith, *Am. J. of Child. Dis.*, Oct., 1925. E. P. Russell, *Michigan State Med. J.*, Dec., 1924. L. A. Hoag, *Am. J. of Child. Dis.*, Oct., 1923. H. Casparis and B. Kramer, M. D., *Johns Hopkins Bulletin*, June, 1924. Dr. Edgar Mayer, *A. M. A.*, Nov. 16, 1935.

Tinea: (Versicolor, Trichophytina, Circinata, Tonsurans, Cruris) Ringworm

Technique: Kromayer—Third to fourth degree erythema contact.

Alpine—Third degree erythema.

Medical Reference: G. C. Andrews, "Diseases of the Skin" (Saunders). Dr. Moses Scholtz, *Urologic and Cu-*

taneous Review, June, 1926. Dr. Alfred A. Storey and E. N. Kime, *Am. J. of Phy. Ther.*, Nov., 1925. Dr. McCormich Mitchell, *Med. World*, Apr. 4, 1930. Dr. Donald J. Wilson, *Arch. of Phy. Ther.*, X-Ray, Radium, Sept., 1932.

Tonsillitis and Hypertrophied Tonsils

The Kromayer Lamp is principally used in treating tonsillitis as well as hypertrophied tonsils. Clean out infection in the latter.

Several authoritative writers report successful treatment of infected and hypertrophied tonsils with the Kromayer Lamp. Marked reduction is often noticeable after the first radiation.

Technique: Kromayer—Second degree erythema, using tonsic applicator or Sharpe Localizer, the entire tonsil should be rayed. Crypts filled with caseous material should first be

cleansed out to allow a thorough radiation of the entire tissues.

Medical Reference: Dr. F. J. Kern, *Ohio Sta. Med. J.*, Apr., 1922. Dr. I. O. Denman, *Eye, Ear, Nose and Throat Monthly*, Mar., 1923. Dr. Austin Furniss, *Med. World*, Sept. 20, 1935. Dr. G. J. Warnshuis, *Arch. of Phy. Ther.*, X-Ray, Radium, Nov., 1931. Dr. F. L. Wahrer, *Arch. of Phy. Ther.*, X-Ray, Radium, Sept., 1932. Dr. Rose Foster, *Brit. J. of Phy. Med.*, June, 1931. Dr. A. J. Cemach, *Eye, Ear, Nose and Throat Monthly*, June, 1929.

Tuberculosis

(See also Empyema.)

Pulmonary tuberculosis shows a high percentage of successful results in children (Dr. B. Feinberg, Bellevue Hospital, New York City).

Surgical tuberculosis appears to require besides ultraviolet treatment, treatment with an incandescent filament lamp to get the best results.

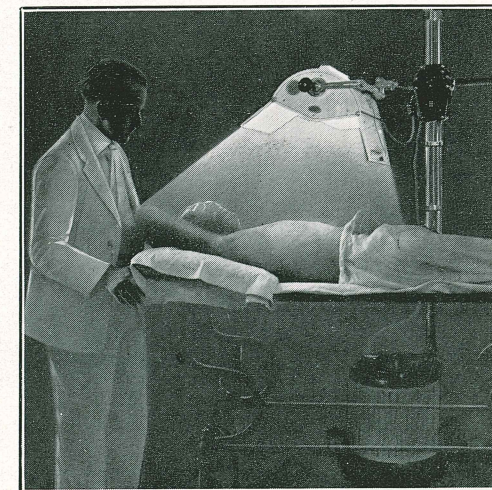
Usually the fever is stopped in one to four weeks, and this is permanent in fifty per cent of the cases. Twenty-five per cent of the tubercular cases in the British Army showed intestinal symptoms and, in Dr. Stewart's paper named in the references given below, all but five of forty-seven cases of intestinal tuberculosis recovered, or were permanently improved; of seventy-seven cases, "many with gross pulmonary lesions," two-thirds have shown improvement.

Surgery is contra-indicated where the small bowel is involved in intestinal tuberculosis. The ultraviolet should be used alone in such conditions.

In many manifestations of tuberculosis the Alpine Sun Lamp has received wide recognition as one of the most important aids in the treatment of this disease.

The literature on this subject, quoted in part below, is extensive and worthy of special study, including the writings of Rollier and other European authors as well as "Clinical Application of Sunlight and Artificial Radiation" by Dr. Edgar Mayer. Where a seat of infection is internal, it is at present a matter of speculation whether a direct action is produced. The indirect action of general body radiations is undoubted. The patient's

resistance is increased, the blood count is improved, his temperature falls, his weight rapidly increases, and in the



ALPINE SUN LAMP GIVING GENERAL BODY RADIATION

words of one writer, "he takes a new lease on life." Tubercular bones and joints, Pott's Disease, and discharging sinuses require, in addition to general body radiations, more intense local radiations with the Alpine Sun Lamp. Tubercular rectal fistulae and tubercular laryngitis may be treated locally with the Kromayer Lamp, using special applicators designed for the purpose.

Technique: Caution should be used in treating until reactivity of patient is determined. General tonic first degree erythema at first.

The following routine is a favorite one with many authorities:

1. As a rule more care must be used in planning for the sicker patients, that is, those who are in bed

Tuberculosis—(Continued)

with fever or those who are quite weak.

2. In all cases, start gradually to avoid burning. The lamp should be 36 inches away, in most cases, using two to three minutes on each of the four parts. This time is usually increased very gradually until skin sensitiveness, that is, burning, stops—then the increases can be a minute a day on each of the four parts.

3. The four parts of the body should be exposed an equal length of time, the increases should be equal on each part.

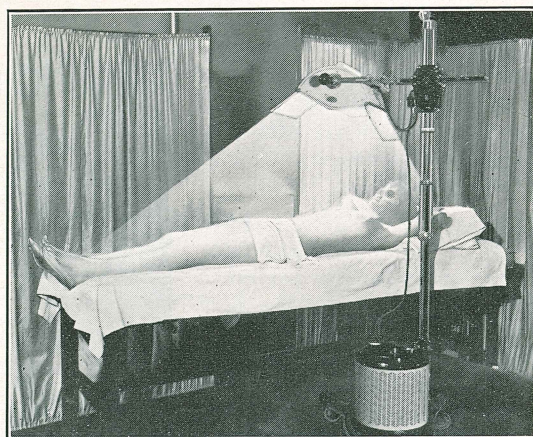
4. Expose parts in the following order: First, the front of the knees, then (patient turns over) on the back of the knees. Then move the table down and apply to back. Again (patient turns over) and apply to front of the chest. In abdominal cases the abdominal application is given last.

5. Work up by increases of one minute a day on each of the four parts until ten minutes on each part is reached. Then bring the Lamp one-half inch closer, each day holding to ten minutes as before, until down to twenty-four inches. Then increase the time one minute per day, until twenty minutes is reached.

6. In abdominal cases, start application of light at 24 inches for one minute. After the first week, if patient does not burn, increase one minute every other treatment, until ten minutes is reached. Then draw up to ten. Keep lowering the lamp one-half inch, until it is within 16 inches.

7. Plan for sicker ones with physician, in beginning, and at any time

there is a problem. Keep temperature record so that results of treatment can be watched. Also note any symp-



TREATING CASE OF TUBERCULAR GLANDS.
COURTESY OF ESSEX COUNTY SANITARIUM,
CALDWELL, N. J.

toms that bear specially on effects of treatment.

8. Remember the daily cleaning of the burner with absorbent cotton and grain alcohol. Also keep the lamp closed when not in use.

Local Treatment of Sinuses:

Cut a hole in a piece of paper corresponding to the size of the sinus, including a small margin of healthy skin, placing it in position to protect the surrounding surface from burning.

Technique: First degree erythema. General body radiations.

In advanced cases the first exposures should be very mild to avoid a temporary rise in temperature. They should be repeated daily, and in some institutions the practice is to radiate at first treatment the feet only; then the knees, gradually increasing the area exposed until the whole body is included. Up to this point, the distance and time of exposure should remain

Tuberculosis—(Continued)

constant, gradually increasing the dosage subsequently, as described under the "General Body Radiations." The patient's tolerance should at all times be carefully borne in mind, and a severe erythema and exfoliation avoided.

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Ulcers, Varicose, Trophic and Traumatic

Chronic ulcers of various kinds, including X-Ray ulcers, respond quickly to treatment with the Alpine Sun Lamp and also the Kromayer Lamp.

The object in view being mild stimulation and simultaneous sterilization of the surface, the dosage should not be excessive. Healthy granulation fol-

lows, with regeneration of the epithelium.

Technique: Alpine—Third degree erythema, first tonic, very mild exposure, from a distance afterwards.

Kromayer—Third degree erythema, at 2½ inches. Treatment weekly.

Medical Reference: Dr. E. L. Oliver,

Ulcers, Varicose, Trophic and Traumatic—(Continued)

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Vitiligo

(See Leukoderma.)

Technique: Kromayer—Using lens applicator under compression third degree erythema. Normal skin around lesion should be protected.

Medical Reference: N. Toomey, J. A. M. A., June 20, 1923. Queries and Minor Notes, J. A. M. A., Mar. 28, 1936. Treatment of Vitiligo, J. A. M. A., Nov. 25, 1933. Dr. Nixon Toomey, Clin. Med. & Surg., Nov., 1933. Queries and Minor Notes, A. M. A., July 16, 1932.

Wounds and Indolent Ulcers

It is reasonably well established that ultraviolet radiation is at times useful either alone or as an adjuvant for the treatment of Indolent Ulcers and wounds: See: "Handbook of Physical Therapy," American Medical Association.

Technique: First cleanse wound thoroughly and carefully remove all pus, scabs, etc., so that light can reach every part of the wound. The rays not only stimulate healthy granulation but the bactericidal effect is assisted by removing all obstructions to the light.

Alpine—General body radiations; giving local second degree erythema if exposed.

Kromayer—First to second degree erythema, locally, using suitable applicator when necessary.

Medical Reference: Dr. Hugo Bach, "Ultra-Violet Light," Paul B. Hoeber, 1916. Dr. A. E. Schiller, Detroit, J. of the Mich. State Med. Soc., June, 1922. Austin Furniss, Med. World, Sept. 20, 1935. Eneas J. Macintyre, Brit. J. of Phy. Med., June, 1933. H. Stanley Banks, Brit. J. of Actinotherapy, Mar., 1928. F. P. Corrigan & W. Boukalik, Brit. J. of Phy. Med., Apr., 1933. Robt. S. Harris, John W. H. Bunker & Nicholas A. Milas, J. A. M. A., Nov. 12, Apr. 30, 1932.

X-Ray Dermatitis

Technique: "In X-Ray burns the ultraviolet treatment for the open ulcer and that for the surrounding skin is different. In the open ulcer it seems advisable to stir up a vigorous reaction for the first treatment or two. To produce this intense erythema, and if in a day or two the reaction does not show

proper intensity, repeat with a heavier dose.

"All sloughs or dead tissue must be cleaned off to permit the penetration of the rays. Any pockets should be exposed by using a pyorrhea rod on the Kromayer Lamp. At subsequent treatments this is not necessary. The

X-Ray Dermatitis—(Continued)

Kromayer is more convenient for the first treatment, but afterwards the Alpine Sun Lamp is better and the whole area can be treated at one exposure in the latter treatment. The strength of the dose can be gradually decreased, starting with a third degree erythema after the first intensive doses have been given to the open ulcer."

Medical Reference: Maj. C. M. Sampson, "Physiotherapy Technic," C. V.

Mosby & Co., 1923. Dr. A. E. Schiller, Mich. Sta. Med. Soc., June, 1922. Dr. J. G. Burke, Read at Col. of Phy. and Surg., Dec. 13, 1917. Dr. Knowles, Arch. of Derm. and Syph., Mar. 1924. Dr. Leonard Hill, Brit. J. of Phy. Med., Sept., 1931. Dr. W. Bocker, Med. Herald, June, July, 1932. Dr. G. M. MacKee, X-Rays and Radium in the treatment of diseases of the Skin, Lee & Febiger.

Conditions in Which Ultraviolet Therapy Is Contra-indicated

In some cutaneous disorders, particularly Eczema rubrum, Xeroderma pigmentosum, farmers skin, prematurely senile (kerototic) skin.

Acute Nephritis.

Severe Arteriosclerosis.

Hydroa Aestivale.

Advanced heart disease, especially if uncompensated.

High fever with intoxication.

Extreme nervous irritability.

